

**Box #1**  
 CXR, CBC, EKG, O2 Sat % on RA at rest and with exercise. PFT's before and after bronchodilators

**Box #2**  
 Criteria for Pulmonary Rehabilitation  
 1. Chronic Stable Disease.  
 2. Non-smoker.  
 3. FEV-1 or DL-CO <65% of predicted.  
 4. Disabling Symptoms.  
 5. Expectation of benefit.  
 6. Physically able & motivated patient.

\* See Medicare NCD 240.0 for specific details



## COPD Guidelines – Physician and Case Managers

### GOLD GUIDELINES

#### Diagnosis and Management of Stable COPD

**Table 1 - Key Indicators for Considering a COPD Diagnosis**

Consider COPD, and perform Spirometry\*, if any of these indicators are present in an individual over age 40. These are not diagnostic themselves, but the presence of multiple key indicators increases the probability of a diagnosis of COPD.

- ❖ **Dyspnea** that is:
  - Progressive (worsen over time)
  - Usually worse with exercise
  - Persistent (present every day)
  - Described by the patient as an “increased effort to breathe,” “heaviness,” “air hunger,” or “gaspings”
  
- ❖ **Chronic cough:** May be intermittent and may be unproductive
  
- ❖ **Chronic sputum production:**
  - Any pattern of chronic sputum production may indicate COPD
  
- ❖ **History of exposure to risk factors:**
  - Tobacco smoke (including popular local preparations)**
  - Occupational dust and chemicals
  - Smoke from home cooking and heating fuel

\*Spirometry – key to early detection of COPD. Perform spirometry if any of above indicators are present in an individual over age of 40. Spirometry is crucial in primary care setting, to establish diagnosis of COPD.

**Table 2 - Spirometric Classification of COPD Severity**

| <b>Stage</b>         | <b>Characteristic</b>  |
|----------------------|--|
| I. Mild COPD         | <ul style="list-style-type: none"> <li>* FEV1/FVC &lt; 70%</li> <li>* FEV1 &gt; 80% predicted</li> <li>* With or without symptoms</li> </ul>                         |
| II. Moderate COPD    | <ul style="list-style-type: none"> <li>* FEV1/FVC &lt; 70%</li> <li>* 50% &lt; FEV1 &lt; 80% predicted</li> <li>* With or without symptoms</li> </ul>                |
| III. Severe COPD     | <ul style="list-style-type: none"> <li>* FEV1/FVC &lt; 70%</li> <li>* 30% &lt; FEV1 &lt; 50% predicted</li> <li>* With or without symptoms</li> </ul>                |
| IV. Very Severe COPD | <ul style="list-style-type: none"> <li>* FEV1/FVC &lt; 70%</li> <li>* FEV1 &lt; 30% predicted or FEV1 &lt; 50% predicted plus chronic respiratory failure</li> </ul> |

## COPD Guidelines – Physician and Case Managers

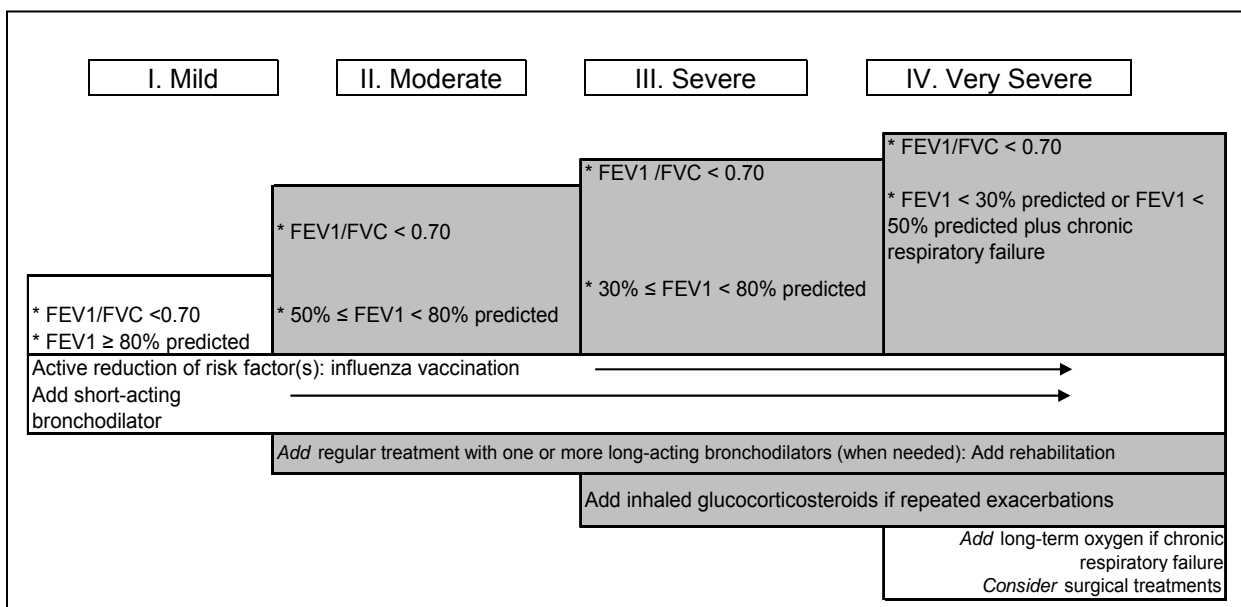
### Guiding Principles:

- ❖ Determine disease severity on an individual basis depending on symptoms, frequency of exacerbations, airflow limitation, complications, and comorbidities.
- ❖ Implement stepwise treatment plan based on disease severity (Table 3)
- ❖ Choose treatment according to national/cultural preferences, patient’s skills/preferred and local availability of medications.

### Management:

- ❖ Patient Education: Smoking cessation, initiate discussion on advanced directives, end-of-life issues, and improve responses to acute exacerbations.
- ❖ Pharmacologic Treatment: Bronchodilators are central to symptom management, inhaled therapy is preferred; regular treatment with long-acting bronchodilators is more effective and convenient than short-acting ones. Glucocorticosteroids – regular treatment with ICS more appropriate for severe to very severe COPD. Long-term oral glucocorticosteroids not recommended.
- ❖ Vaccines: Yearly influenza vaccine reduces serious illness and death in COPD patients by 50%. Pneumococcal vaccine recommended for COPD patients 65 years and older.
- ❖ Antibiotics: Not recommended for routine use. To be used for infections exacerbations.
- ❖ Mucolytic Agents: Overall benefits are very small and not recommended.
- ❖ Antitussives: Regular use contraindicated in stable COPD.
- ❖ Non-Pharmacologic Treatment: Rehabilitation, O<sub>2</sub>, surgical interventions.
- ❖ Rehabilitation: At a minimum: exercise training, nutrition counseling, and education. Goals are to reduce symptoms, improve quality of life and improve function.

**Table 3 - Therapy at Each Stage of COPD**





## COPD Guidelines – Physician and Case Managers

### STAGE

### THERAPY

MILD I:

1. Active reduction of risk factors
2. Flu vaccination every season
3. Pneumococcal Polysaccharide vaccination – once and re-vaccination after 5 years as indicated
4. Short-acting bronchodilator (as needed)
5. Smoking cessation

MODERATE II:

1. Same as mild  
plus
2. Regular treatment with one more long-acting bronchodilators (when needed)
3. Add rehabilitation

SEVERE III:

1. Same as moderate  
plus
2. Inhaled corticosteroids (ICS) if repeated exacerbations (3 in the past 3 years). Long term use of high dose ICS not recommended (GOLD)
3. O<sub>2</sub> therapy if criteria met

VERY SEVERE IV:

1. Same as severe  
plus
2. Add long-term oxygen if chronic respiratory failure
3. Consider surgical options. Bullectomy or lung transplantation in carefully selected patients:  
\* PaO<sub>2</sub> < 55 mm Hg or SaO<sub>2</sub> < 80% with/or without hypercapnia  
\* PaO<sub>2</sub> 56 – comm. Hg or SaO<sub>2</sub> < 89%, if pulm HTN, peripheral edema, CHF, or polycythemia



## **COPD Guidelines References**

### **COPD Guidelines adapted from:**

- Guidelines adapted from Global Initiative for Chronic Obstructive Lung Disease (GOLD). [www.gold.org](http://www.gold.org).
- American College of Physicians (ACP)
- American College of Chest Physicians
- Drug Facts & Comparisons. (2010, Feb). Retrieved from [www.online.factsandcomparisons.com](http://www.online.factsandcomparisons.com). Wolters Kluwer Health: Deventer, The Netherlands.



## Pharmacologic Agents for Treatment of COPD

### 2010 SCAN Formulary Drugs

| Medication   | Dosing & Administration | Adverse Drug Reactions                                   | Tier Level & Notes             |                                   |                   |
|--|-------------------------|--|--------------------------------|-----------------------------------|-------------------|
|  |                         |  | CA (except San Joaquin County) | AZ SNP/ MAPD & San Joaquin County | AZ Long Term Care |
| <b>Long-Action Inhaled Beta Agonists (Maintenance)</b> |                         |  |                                |                                   |                   |
| SEREVENT DISKUS (salmeterol)                           | 1 puff BID              | Headache, bronchitis, nasal congestion                   | 3                              | NF                                | NF                |
| FORADIL (formoterol)                                   | 1 cap (inhalation) BID  | Bronchitis, tremors, dizziness, tachycardia, hypokalemia | 3 [QL]                         | 2 [QL]                            | 2[QL]             |
| <b>Short –Acting inhaled Beta Agonists (Rescue)</b>    |                         |  |                                |                                   |                   |
| PROAIR HFA (albuterol)                                 | 2 puffs QID prn         | Insomnia, nervousness, tremors, headache, hypokalemia    | 3 [QL]                         | 2 [QL]                            | 2[QL]             |
| PROVENTIL HFA (albuterol)                              | 2 puffs QID prn         | Insomnia, nervousness, tremors, headache, hypokalemia    | 3 [QL]                         | 2 [QL]                            | NF                |
| VENTOLIN HFA (albuterol)                               | 2 puffs QID prn         | Insomnia, nervousness, tremors, headache, hypokalemia    | 3                              | NF                                | NF                |
| XOPENEX HFA (levalbuterol)                             | 2 puffs QID prn         | Rhinitis, sinusitis, nervousness, edema, hypokalemia     | 3 [QL]                         | NF                                | NF                |



| <b>Inhaled Anticholinergics (Maintenance)</b> |                       |   |        |             |             |
|---|-----------------------|---|--------|-------------|-------------|
| ATROVENT HFA (ipratopium)                     | 2-3 puffs QID         | Cough, dizziness, dry mouth, GI distress, Nausea                  | 3 [QL] | 2 [QL]      | 2[QL]       |
| SPIRIVA (tiotropium)                          | 1 Cap (inhalation) QD | Dry mouth, sinusitis, abdominal pain, constipation                | 3 [QL] | 2 [QL]      | 2[QL]       |
| <b>Inhaled Corticosteroids (Maintenance)</b>  |                       |   |        |             |             |
| AZMACORT (triamcinolone)                      | 2 puffs QID           | Headache, pharyngitis, back pain, sinusitis, flu syndrome         | 3 [QL] | NF          | NF          |
| QVAR HFA (beclomethasone)                     | 2 puffs BID           | Bronchospasm, <i>Candida Albicans</i> over growth (mouth/pharynx) | 3 [QL] | 2 [QL]      | 2[QL]       |
| FLOVENT HFA (fluticasone)                     | 2 puffs BID           | Headache, nasal congestion, pharyngitis, dysporia                 | 3      | NF          | NF          |
| FLOVENT DISKUS (fluticasone)                  | 1 puff BID            | Headache, nasal congestion, pharyngitis, dysporia                 | 3      | NF          | NF          |
| <b>Combination Inhalers (Maintenance)</b>     |                       |   |        |             |             |
| ADVAIR DISKUS (salmeterol / fluticasone)      | 1 puff BID            | Headache, pharyngitis, cough, sinusitis, nausea/ vomiting         | 3      | 2[PA], [QL] | 2[PA], [QL] |
| ADVAIR HFA (salmeterol / fluticasone)         | 2 puffs BID           | Headache, pharyngitis, cough, sinusitis, nausea/ vomiting         | 3      | 2[PA], [QL] | 2[PA], [QL] |



|  |                  |   |        |                |                |
|--|------------------|---|--------|----------------|----------------|
| COMBIVENT<br>(albuterol/ ipratropium)                    | 1-2 puff QID     | Bronchitis, cough, dyspnea,<br>headache, nausea, flu syndrome | 3 [QL] | 2 [QL]         | 2[QL]          |
| SYMBICORT<br>(budesonide / formoterol)                   | 2 puff BID       | Nasopharyngitis, sinusitis, headache                          | 3      | 2[PA],<br>[QL] | 2[PA],<br>[QL] |
| <b>Oral Sympathomimetic Bronchodiators (Maintenance)</b> |                  |   |        |                |                |
| <i>albuterol oral</i>                                    | 2-4 mg PO QID    | Insomnia, nervousness, tremors,<br>nausea, hypokalemia        | 2      | 1              | 1              |
| <i>albuterol er oral</i>                                 | 8 mg PO BID      | Insomnia, nervousness, tremors,<br>nausea, hypokalemia        | 2      | 1              | 1              |
| <i>terbutaline</i>                                       | 5mg PO TID       | Tachycardia, transient hyperglycemia,<br>cardiac arrhythmias  | 2      | 1              | 1              |
| <b>Oral Corticosteroids (Maintenance)</b>                |                  |   |        |                |                |
| <i>prednisone</i>  | Patient specific | GI upset, muscle weakness,<br>hyperglycemia                   | 2      | 1              | 1              |
| <i>prednisolone</i>                                      | Patient specific | GI upset, muscle weakness,<br>hyperglycemia                   | 2      | 1              | 1              |
| <i>methylprednisolone</i>                                | Patient specific | GI upset, muscle weakness,<br>hyperglycemia                   | 2      | 1              | 1              |
| <b>Oral Xanthines (Maintenance)</b>                      |                  |   |        |                |                |
| <i>aminophylline oral</i>                                | Patient specific | Nausea, vomiting, headache,<br>insomnia, seizures             | 2      | 1              | 1              |



|                        |                  |  |   |   |   |
|------------------------|------------------|--|---|---|---|
| <i>theophylline er</i> | Patient Specific | Nausea, vomiting, headache, insomnia, seizures | 2 | 1 | 1 |
|------------------------|------------------|--|---|---|---|

Brand-name drugs are capitalized and generic drugs are listed in lower-case italics

[NF] = Non-formulary

[PA] = Prior Authorization

[QL] = Quantity Limit