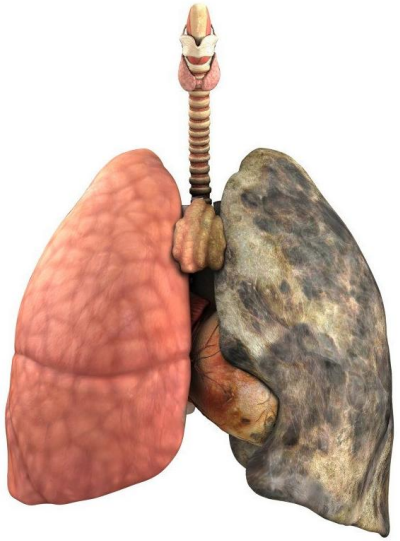
COPD: Clinician Update

Remote Attendees, Welcome!
Please leave your phones on **MUTE** – Thank You!

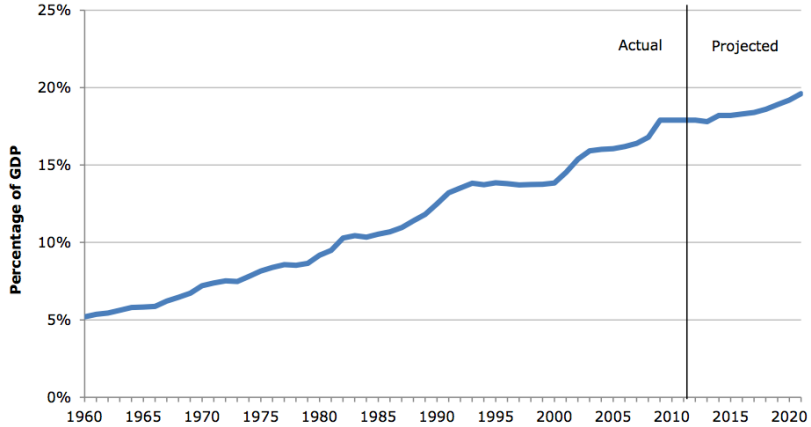
COPD: Clinician Update



Rhett Cummings, MD
Pulmonary Medicine; Critical Care Medicine
The Oregon Clinic

Costs of Smoking

Figure 2: U.S. National Health Expenditures as a Share of GDP, 1960-2021



Source: Centers for Medicare and Medicaid Services.

-$3.5 trillion
-$10,740/person
-17.9% of GDP

-8.6% smoking-related
-$925/person
-1.54% of GDP

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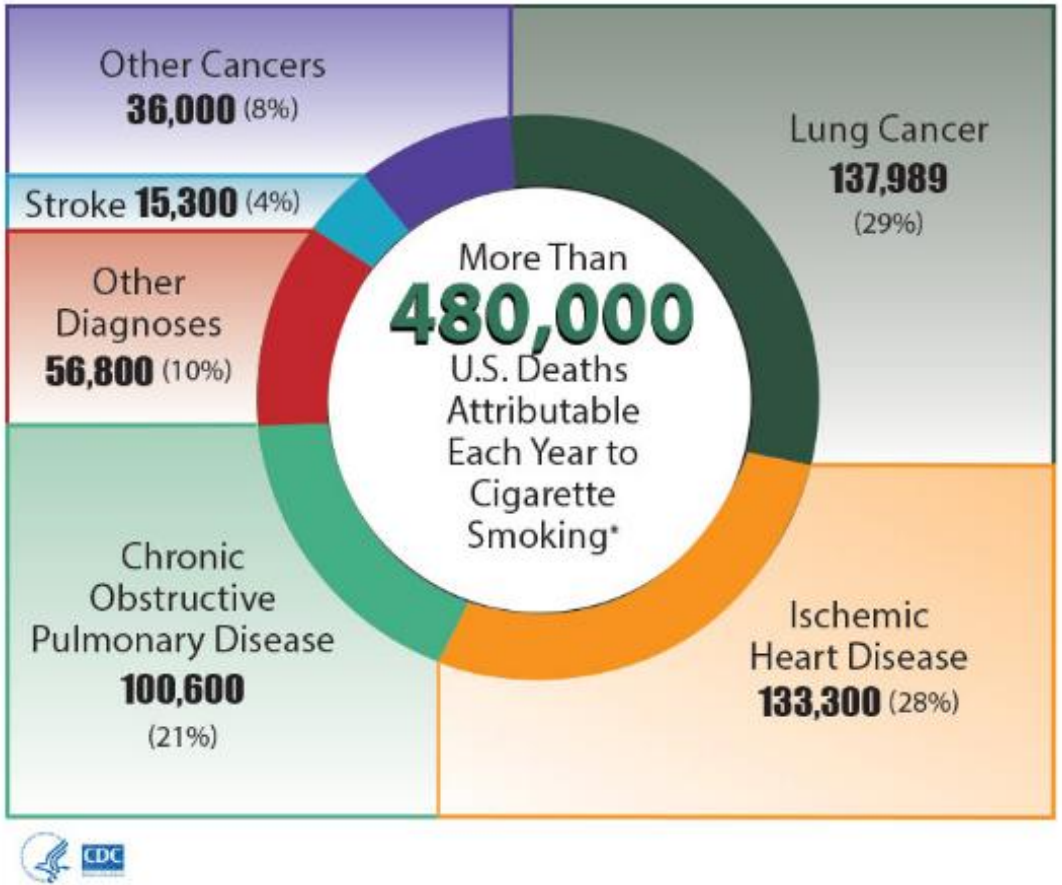
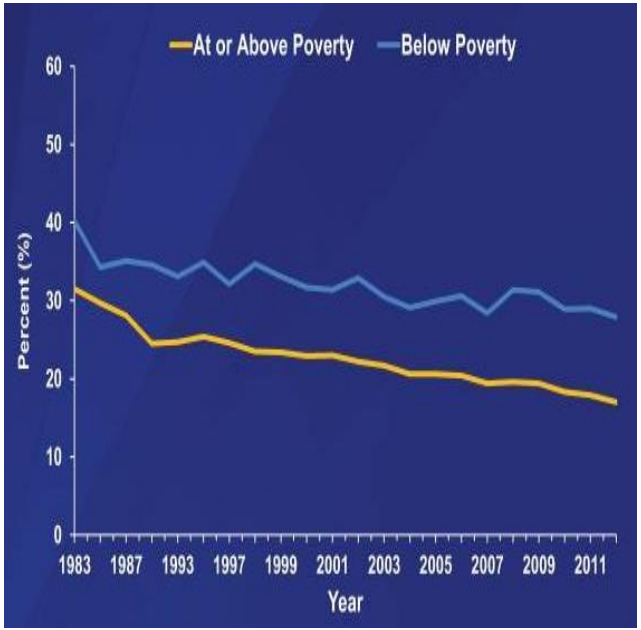
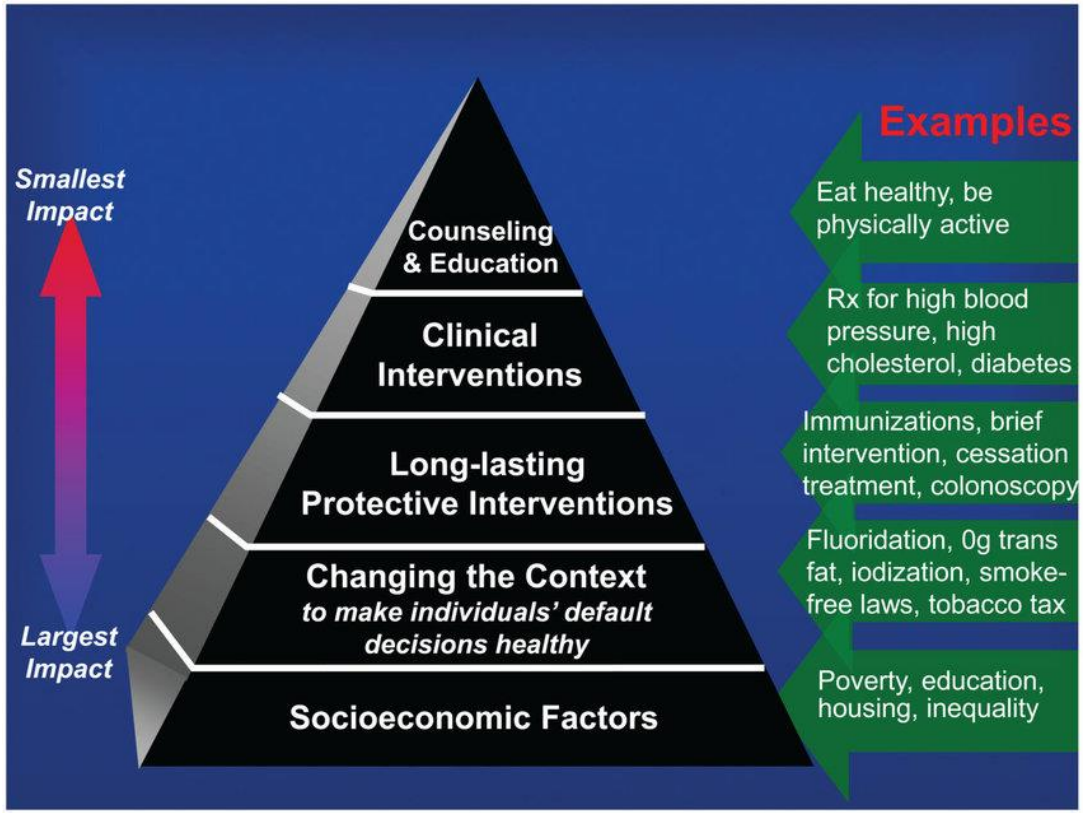

Other Cancers
36,000 (8%)
Stroke 15,300 (4%)
Other Diagnoses
56,800 (10%)
Chronic Obstructive Pulmonary Disease
100,600
(21%)
More Than
480,000
U.S. Deaths Attributable Each Year to Cigarette Smoking*
Lung Cancer
137,989
(29%)
Ischemic Heart Disease
133,300 (28%)

Social Determinants



Source: Garrett, et al. Addressing the social determinants of health to reduce tobacco-related disparities. Nicotine Tob Res. 2015.

Health Impact Pyramid



Source: Frieden. Am J Public Health. 2010

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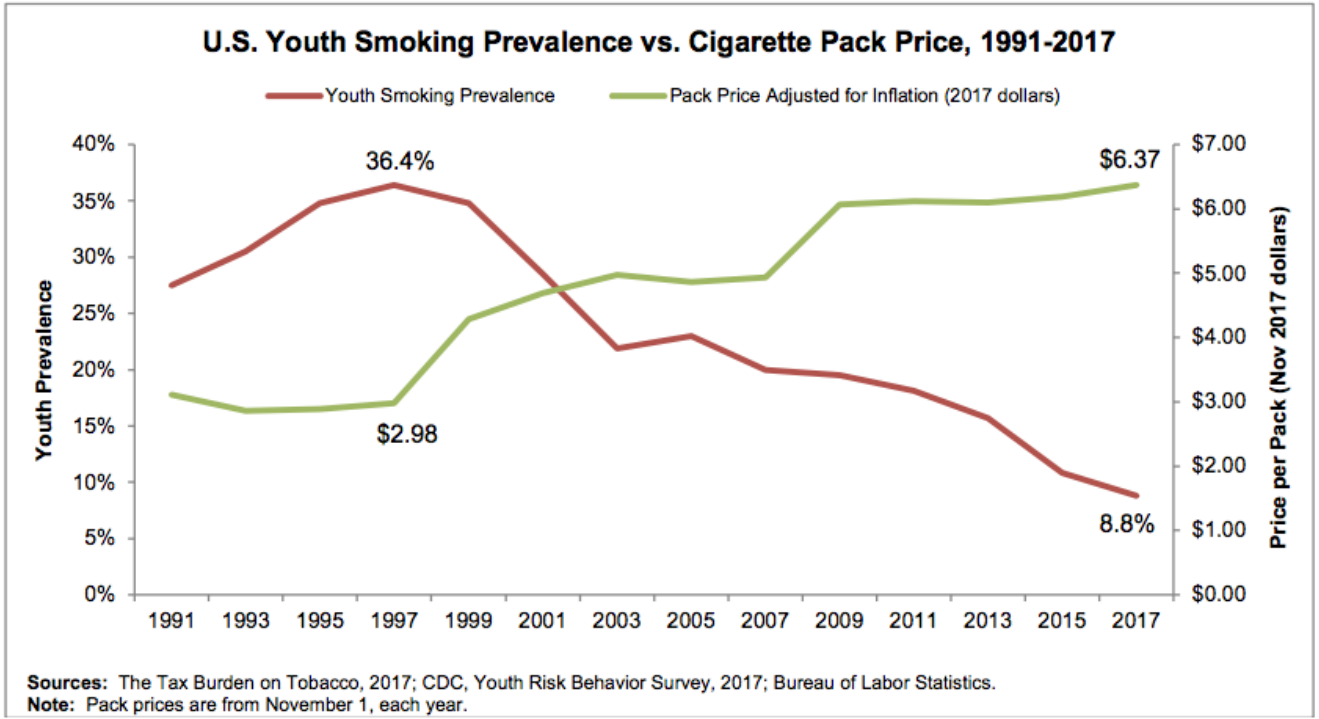
US Cigarette Price



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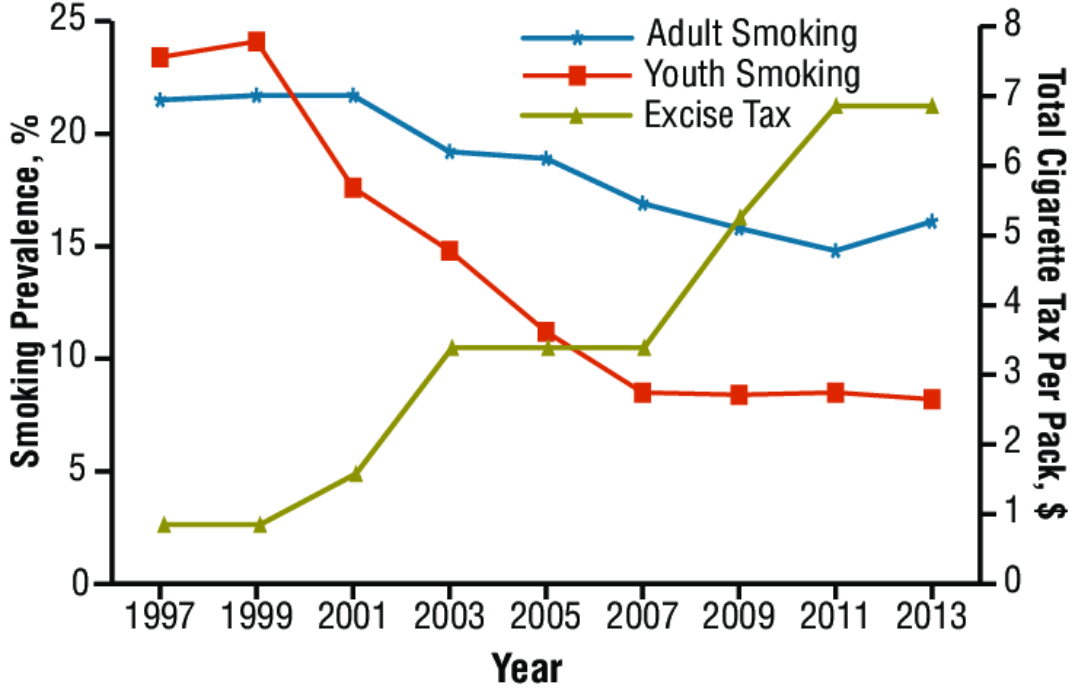
NYC Cigarette Taxes and Smoking



Cigarette Taxes and Youth/Adult Smoking Prevalence Rates, New York City, 1997- 2013

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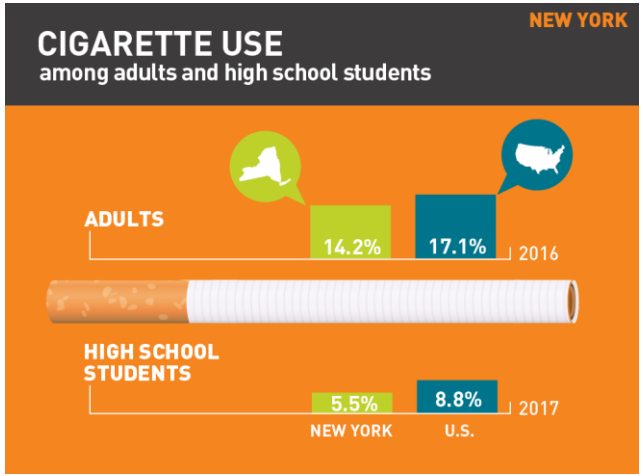
NY State Cigarette Policy 2018



2016 - 1 PPD: OR $2077/yr NY $4690/yr

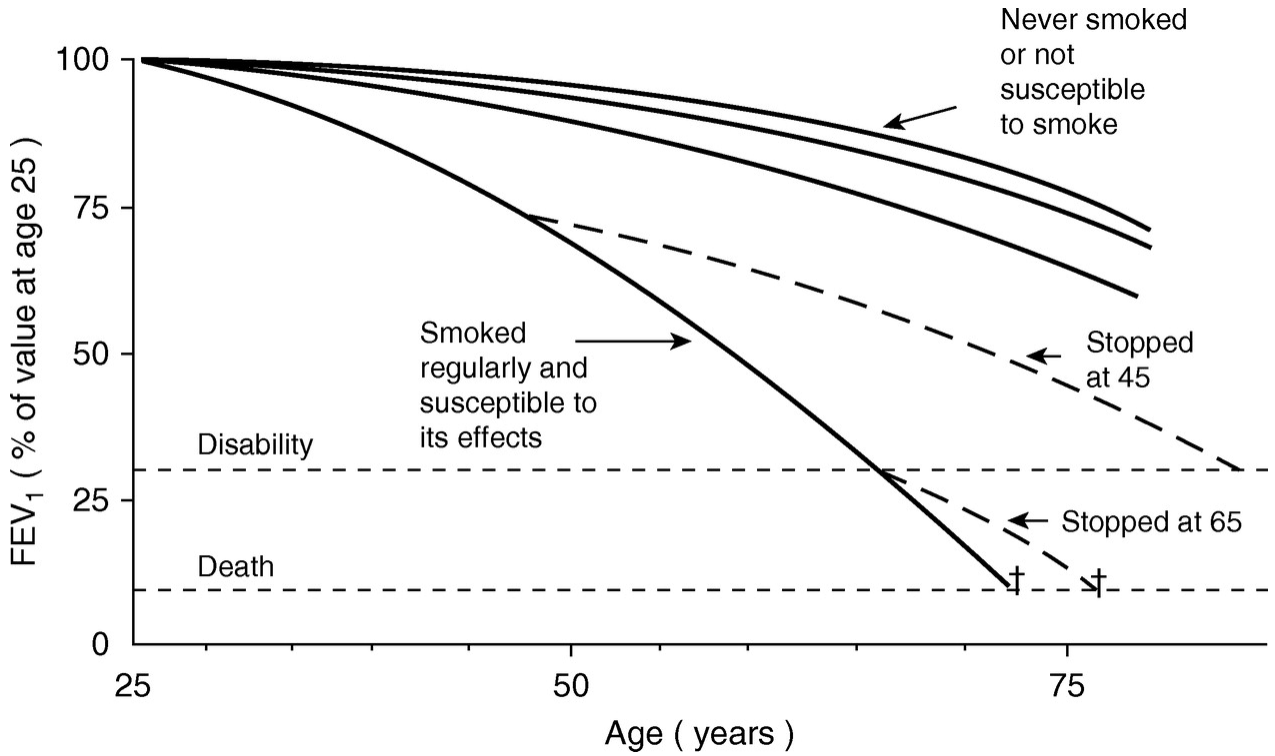
Source: https://truthinitiative.org/tobacco-use-new-york

Smoking Cessation: Playing The Odds

The combination of counseling and medication is more effective than either alone

United States Preventive Services Task Force (USPSTF)

The Fletcher-Peto Diagram



Source: BMJ. 1977.

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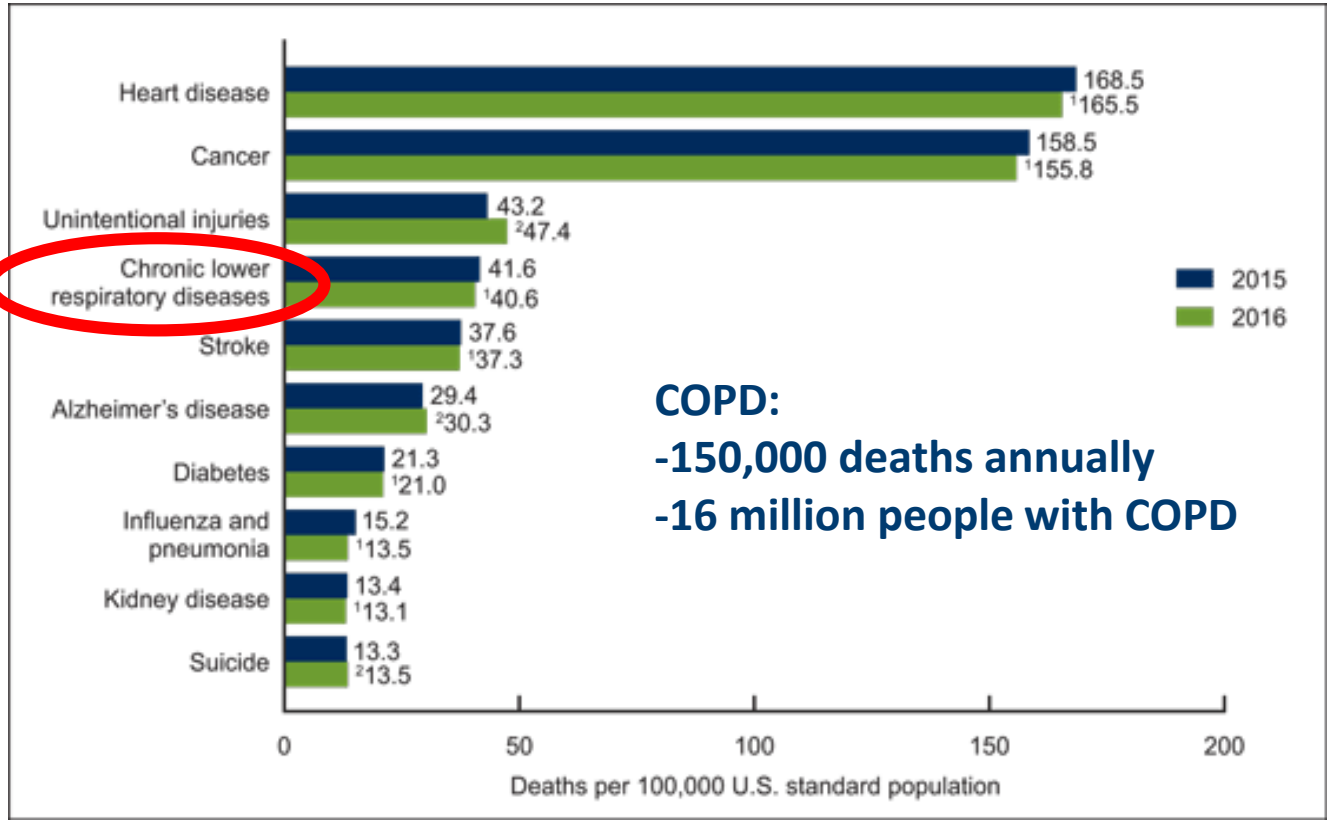
US Causes of Death



COPD:
-150,000 deaths annually
-16 million people with COPD

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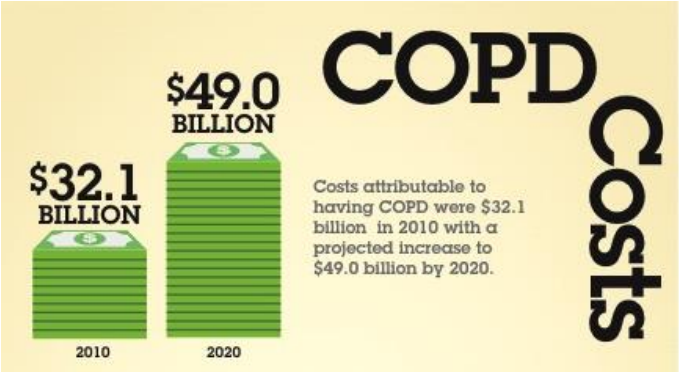
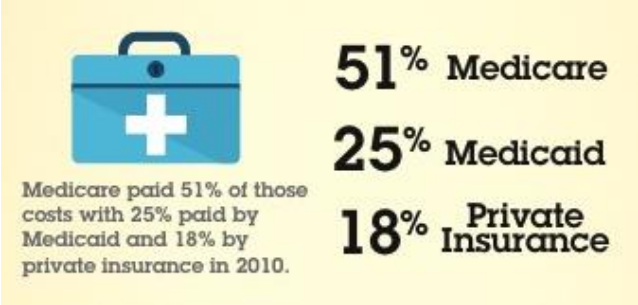
Costs of COPD





Source: www.cdc.gov/copd

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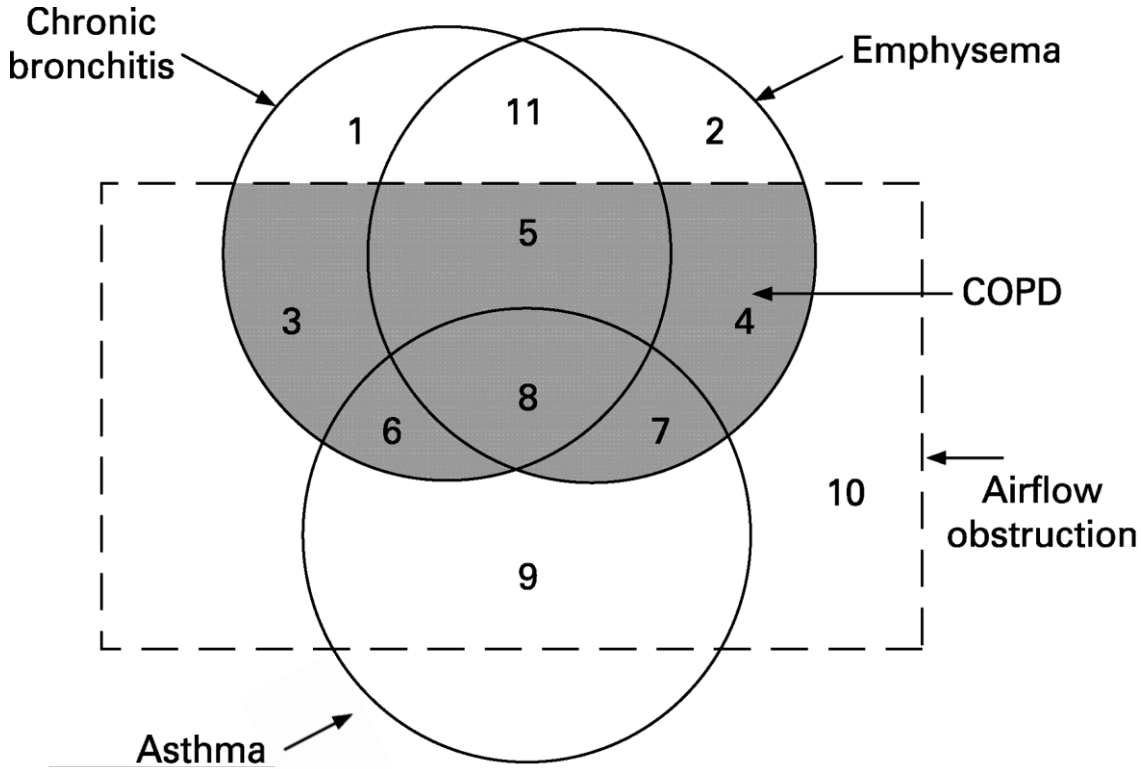
COPD Phenotypes



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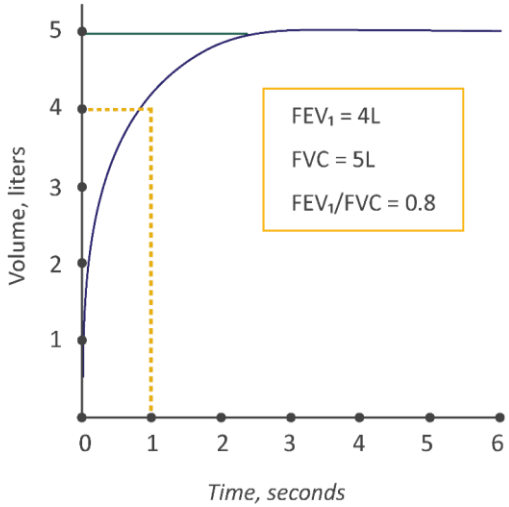
COPD Diagnosis

- SYMPTOMS
- RISK FACTORS
- SPIROMETRY

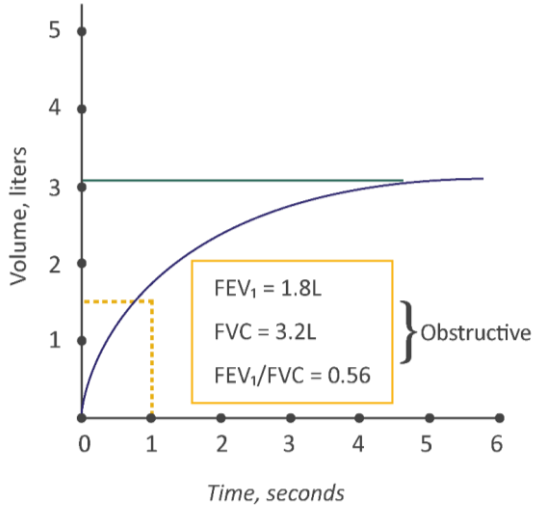
OTHER ASSESSMENT

- EXACERBATIONS
- CO-MORBIDITIES

SPIROMETRY - NORMAL TRACE



SPIROMETRY - OBSTRUCTIVE DISEASE



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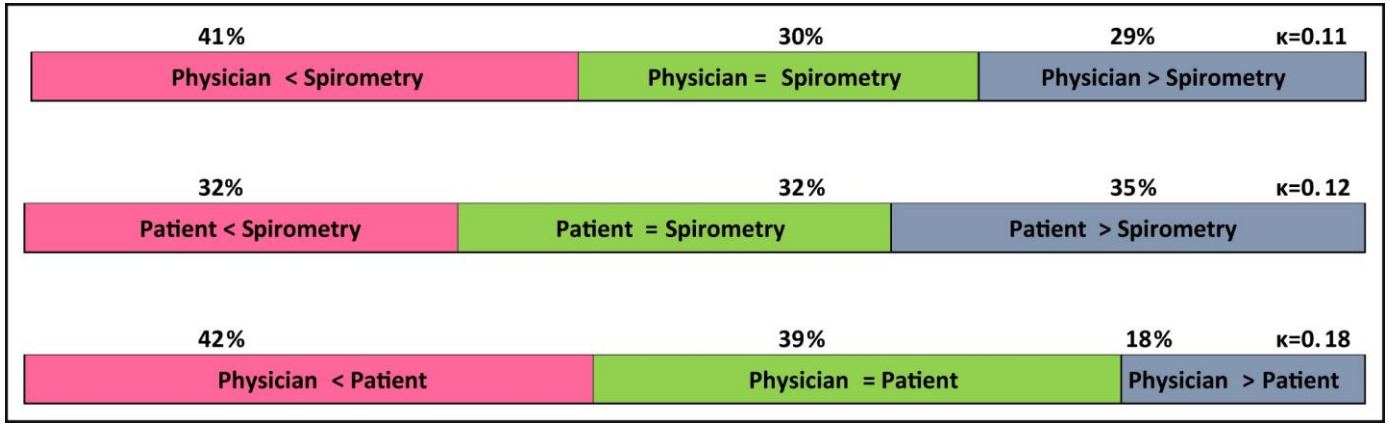
COPD Severity Assessment by PCPs and Patients



Pre-test Severity Estimates

Source: Am J of Medicine, June 2015. https://doi.org/10.1016/j.amjmed.2014.12.018

COPD Assessment Test (CAT™)

CAT™ ASSESSMENT

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**
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

SCORE

TOTAL SCORE: ◯

Reference: Jones et al. ERJ 2009; 34 (3); 648-54.

≥10

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Modified MRC Dyspnea Scale

MODIFIED MRC DYSPNEA SCALE[a]

PLEASE TICK IN THE BOX THAT APPLIES TO YOU | ONE BOX ONLY | Grades 0 - 4

mMRC Grade 0.	I only get breathless with strenuous exercise.	☐
mMRC Grade 1.	I get short of breath when hurrying on the level or walking up a slight hill.	☐
mMRC Grade 2.	I walk slower than people of the same age on the level because of breathlessness, or I have to stop for breath when walking on my own pace on the level.	☐
mMRC Grade 3.	I stop for breath after walking about 100 meters or after a few minutes on the level.	☐
mMRC Grade 4.	I am too breathless to leave the house or I am breathless when dressing or undressing.	☐

[a] Fletcher CM. BMJ 1960; 2: 1662.

THE GOLD REFINED ABCD ASSESSMENT TOOL

Diagnosis = **Assessment of airflow limitation** + **Assessment of symptoms/risk of exacerbations**

FEV1/FVC<0.7

Grade	FEV_1 (% pred.)
1	≥80
2	50-79
3	30-49
4	<30

Exacerbation History	mMRC 0-1 CAT < 10 CCQ < 1	mMRC 2+ CAT 10+ CCQ 1+
≥ 2 or ≥1 leading to hospitalization	C	D
0 or 1 (not leading to hospital admission)	A	B

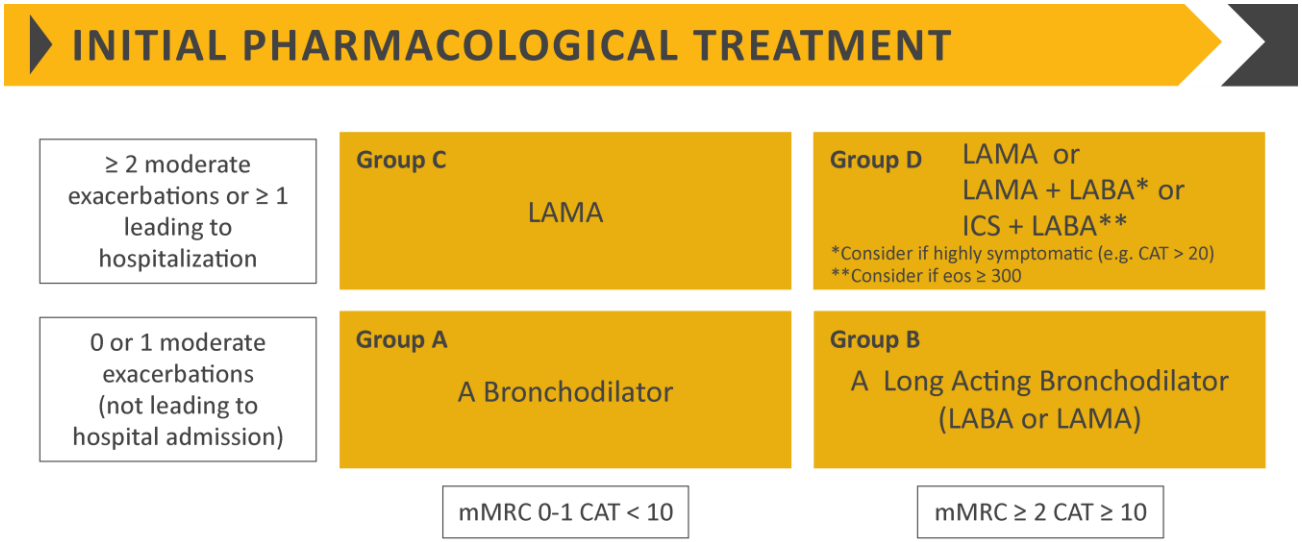
Grade: 3, 4 / 1, 2

COPD Treatments and Benefits

Treatments	Benefit
Smoking Cessation	**Survival** Exacerbations
SABA	Symptoms
SAMA	Symptoms
LABA	Exacerbations
LAMA	Exacerbations
ICS	Exacerbations
LABA + ICS	Exacerbations
LAMA + LABA + ICS	Exacerbations
Systemic steroids	Shorten exacerbations

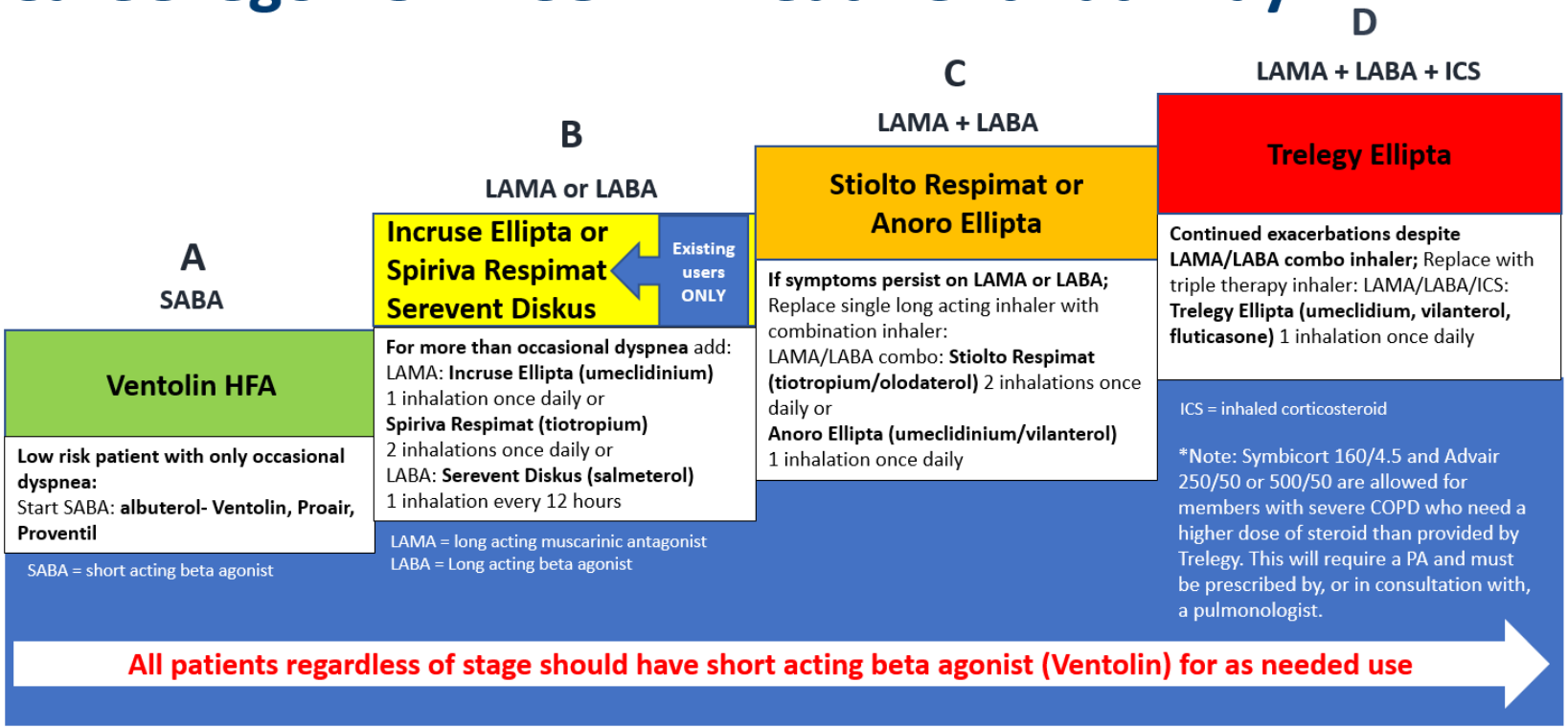
Treatments	Benefit
PDE4 inhibitor	Exacerbations
Chronic macrolide	Exacerbations
Pulmonary Rehab	Symptoms
Theophylline	Unclear
Antioxidants	None
Oxygen	**Survival**
LVRS	**Survival**
Lung Transplant	Symptoms
Palliative Care	Symptoms Hospitalizations

Treatment of stable COPD



Definition of abbreviations: eos: blood eosinophil count in cells per microliter; mMRC: modified Medical Research Council dyspnea questionnaire; CAT™: COPD Assessment Test™.

CareOregon OHP COPD Treatment Pathway



***Please note, Combivent has been de-emphasized in guidelines and should not be considered appropriate therapy for most COPD patients. If albuterol is not sufficient, the appropriate next step is the addition of long acting therapy.**

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Questions?

Medications Made Easy(ier)

Mariah Alford, PharmD, BCPS
Pharmacy Clinical Supervisor
CareOregon

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Prevention & Maintenance Therapy

OVERALL KEY POINTS:

- **Smoking cessation is key.** Pharmacotherapy and nicotine replacement reliably increase long-term smoking abstinence rates. Legislative smoking bans and counselling, delivered by healthcare professionals improve quit rates.

- **Pharmacologic therapy can reduce COPD symptoms**, reduce the frequency and severity of exacerbations, and improve health status and exercise tolerance.

- **Each pharmacologic treatment regimen should be individualized** and guided by the severity of symptoms, risk of exacerbations, side-effects, comorbidities, drug availability and cost, and the patient's response, preference and ability to use various drug delivery devices.

Prevention & Maintenance Therapy

OVERALL KEY POINTS (continued):

- **Inhaler technique needs to be assessed regularly.**
- Influenza vaccination decreases the incidence of lower respiratory tract infections.
- Pneumococcal vaccination decreases lower respiratory tract infections.
- Palliative approaches are effective in controlling symptoms in advanced COPD.

Smoking Cessation

- Smoking cessation has the greatest capacity to influence the natural history of COPD.

- If effective resources and time are dedicated to smoking cessation, long-term quit success rates of up to 25% can be achieved.

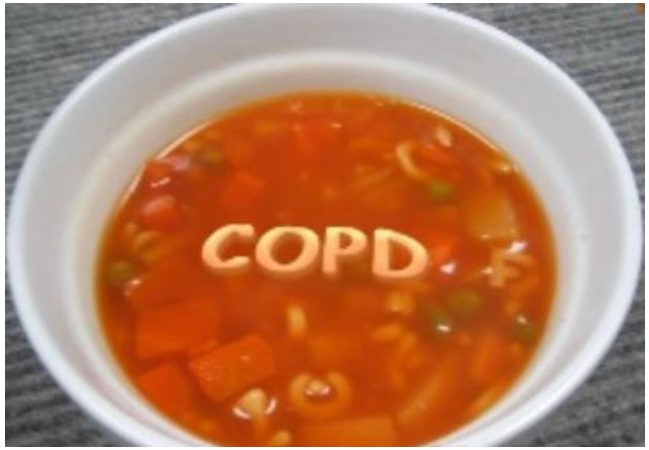
Smoking cessation products covered by CareOregon OHP

Product	Coverage
Nicotine products: patch, lozenge, gum Inhaler or nasal spray (**with PA:** failure of patch, lozenge, gum AND bupropion)	180 days per 365 day period per product Up to max FDA-approved dosing
Bupropion (Buproban)	180 days per 365 day period Up to max FDA-approved dosing
Varenicline (Chantix)	90 days per 365 day period Up to max FDA-approved dosing

Vaccination

- Influenza vaccination can reduce serious illness (such as lower respiratory tract infections requiring hospitalization) and death in COPD patients.
- Pneumococcal vaccinations, PCV13 and PPSV23, are recommended for all patients ≥ 65 years of age.

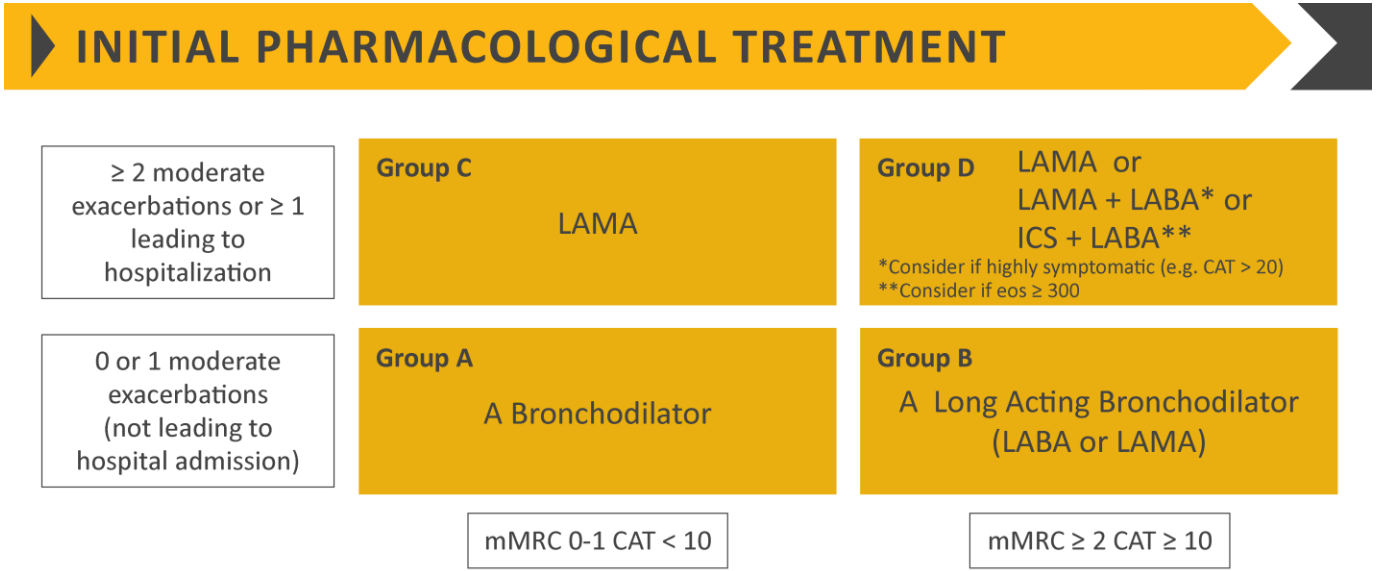
Alphabet Soup –
What does it all mean?



Inhaler Abbreviations

- SABA – Short-Acting Beta Agonist
  Albuterol (Ventolin)
- SAMA – Short-Acting Muscarinic Antagonist
  Ipratropium (Atrovent)
- LABA – Long-Acting Beta Agonist
  Salmeterol (Serevent)
- LAMA – Long-Acting Muscarinic Antagonist
  Tiotropium (Spiriva)
- ICS – Inhaled CorticoSteroid

Treatment of stable COPD



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COPD Assessment Test (CAT™)

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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

SCORE

TOTAL SCORE: ◯

Reference: Jones et al. ERJ 2009; 34 (3); 648-54.

≥10

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COPD Treatments and Benefits

Smoking Cessation	**Survival Exacerbations**
SABA	**Symptoms**
SAMA	**Symptoms**
LABA	**Exacerbations**
LAMA	**Exacerbations**
ICS	**Exacerbations**
LABA + ICS	**Exacerbations**
LAMA + LABA + ICS	**Exacerbations**
Systemic steroids	**Shorten exacerbations**

Treatments	Benefit
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Chronic macrolide	**Exacerbations**
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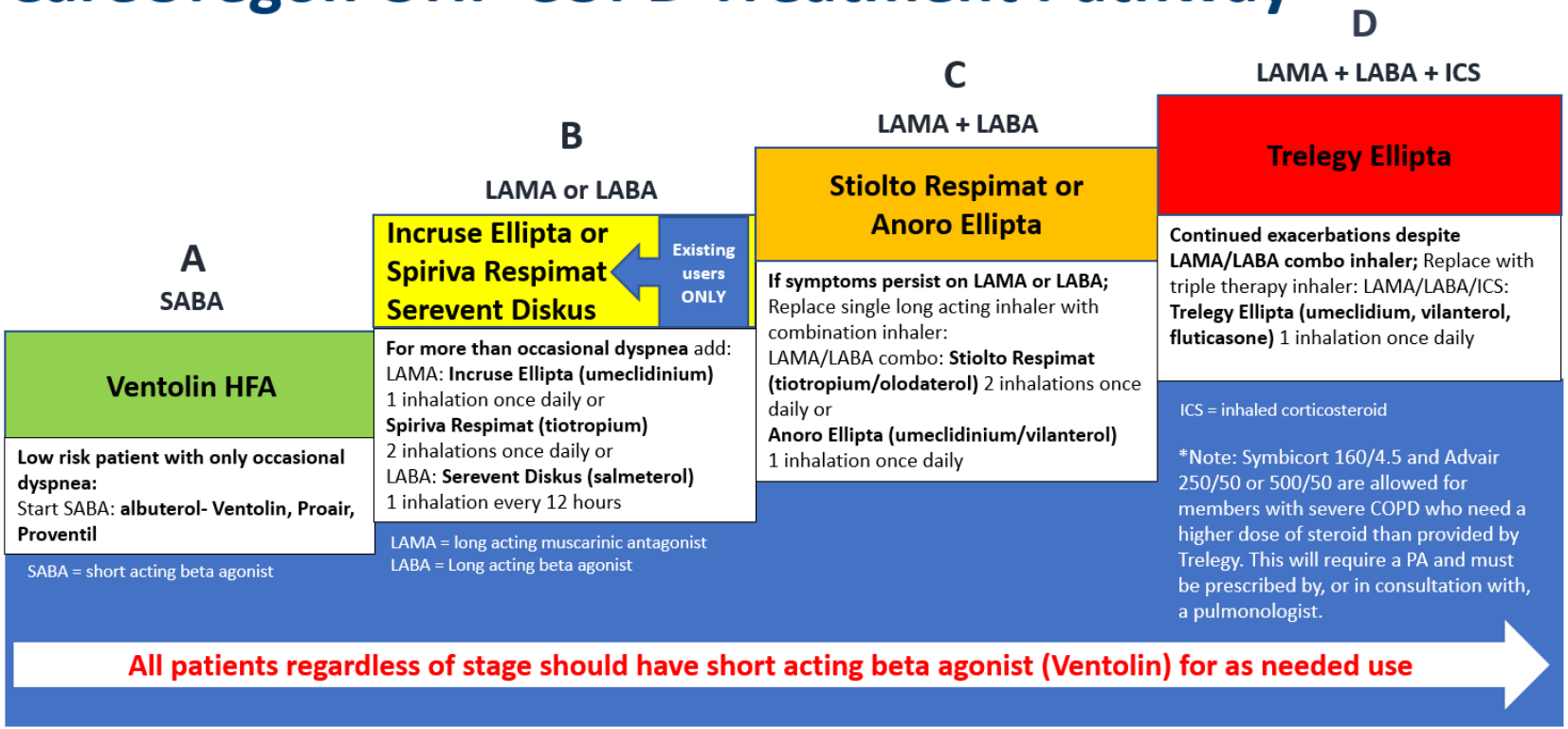
CareOregon OHP COPD Treatment Pathway



***Please note, Combivent has been de-emphasized in guidelines and should not be considered appropriate therapy for most COPD patients. If albuterol is not sufficient, the appropriate next step is the addition of long acting therapy.**

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Management of stable COPD

OVERALL KEY POINTS:

- The management strategy for stable COPD should be predominantly based on the individualized assessment of symptoms and future risk of exacerbations.
- All individuals who smoke should be strongly encouraged and supported to quit.
- The main treatment goals are reduction of symptoms and future risk of exacerbations.
- Management strategies are not limited to pharmacologic treatments, and should be complemented by appropriate non-pharmacologic interventions.

Pharmacological therapy

THE INHALED ROUTE

- When a treatment is given by the inhaled route, the importance of education and training in inhaler device technique cannot be over-emphasized.
- The choice of inhaler device has to be individually tailored and will depend on access, cost, prescriber, and most importantly, patient's ability and preference.
- It is essential to provide instructions and to demonstrate the proper inhalation technique when prescribing a device, to ensure that inhaler technique is adequate and re-check at each visit that patients continue to use their inhaler correctly.
- Inhaler technique (and adherence to therapy) should be assessed before concluding that the current therapy is insufficient.

Palliative, end-of-life & hospice care

PALLIATIVE CARE, END OF LIFE AND HOSPICE CARE IN COPD

- Opiates, neuromuscular electrical stimulation (NMES), oxygen and fans blowing air on to the face can relieve breathlessness **(Evidence C)**.
- In malnourished patients, nutritional supplementation may improve respiratory muscle strength and overall health status **(Evidence B)**.
- Fatigue can be improved by self-management education, pulmonary rehabilitation, nutritional support and mind-body interventions **(Evidence B)**.

Treatment of Stable COPD

Pharmacological treatment

- Pharmacological therapies can reduce symptoms, and the risk and severity of exacerbations, as well as improve health status and exercise tolerance.
- **Most of the drugs are inhaled so proper inhaler technique is of high relevance.**

KEY POINTS FOR INHALATION OF DRUGS

- The choice of inhaler device has to be individually tailored and will depend on access, cost, prescriber, and most importantly, patient's ability and preference.
- It is essential to provide instructions and to demonstrate the proper inhalation technique when prescribing a device, to ensure that inhaler technique is adequate and re-check at each visit that patients continue to use their inhaler correctly.
- Inhaler technique (and adherence to therapy) should be assessed before concluding that the current therapy requires modification.

Treatment of Stable COPD

Pharmacological treatment

KEY POINTS FOR THE USE OF BRONCHODILATORS

- LABAs and LAMAs are preferred over short-acting agents except for patients with only occasional dyspnea. **(Evidence A)**.
- Patients may be started on single long-acting bronchodilator therapy or dual long-acting bronchodilator therapy. In patients with persistent dyspnea on one bronchodilator treatment should be escalated to two **(Evidence A)**.
- Inhaled bronchodilators are recommended over oral bronchodilators **(Evidence A)**.
- Theophylline is not recommended unless other long-term treatment bronchodilators are unavailable or unaffordable **(Evidence B)**.

Treatment of Stable COPD

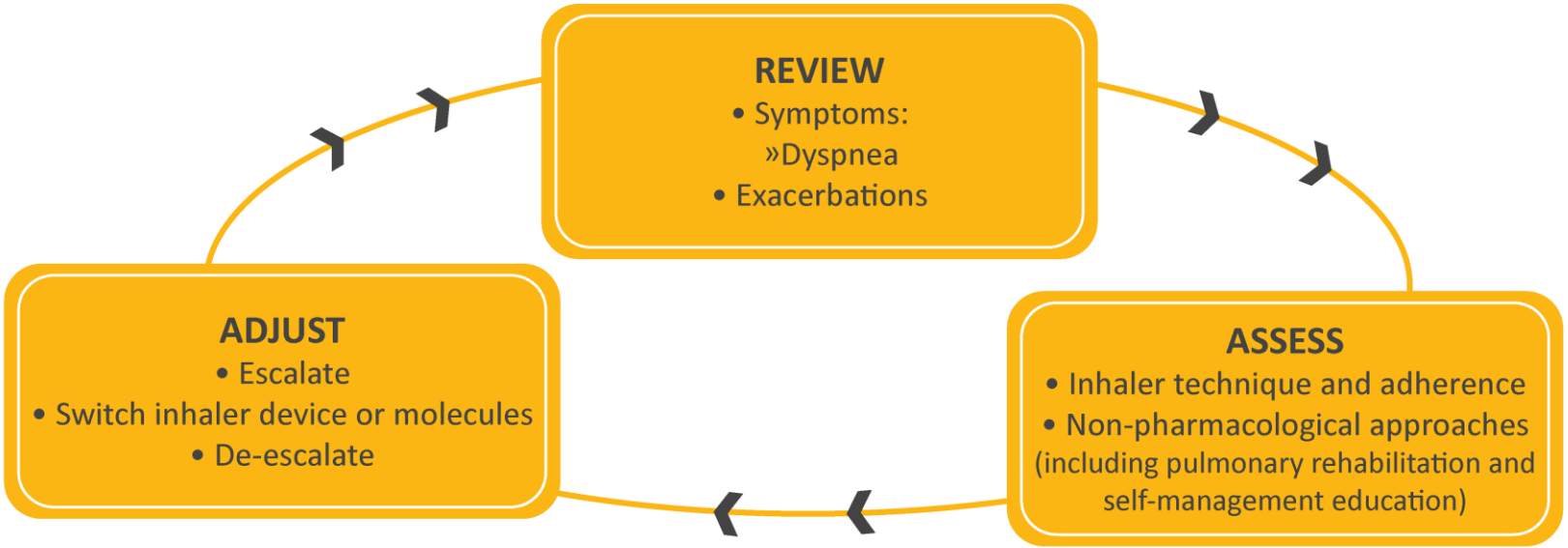
Pharmacological treatment

KEY POINTS FOR THE USE OF ANTI-INFLAMMATORY AGENTS

- Long-term monotherapy with ICS is not recommended **(Evidence A)**.
- Long-term treatment with ICS may be considered in association with LABAs for patients with a history of exacerbations despite appropriate treatment with long-acting bronchodilators **(Evidence A)**.
- Long-term therapy with oral corticosteroids is not recommended **(Evidence A)**.
- In patients with exacerbations despite LABA/ICS or LABA/LAMA/ICS, chronic bronchitis and severe to very severe airflow obstruction, the addition of a PDE4 inhibitor can be considered **(Evidence B)**.
- In former smokers with exacerbations despite appropriate therapy, macrolides, in particular azithromycin, can be considered **(Evidence B)**.
- Statin therapy is not recommended for prevention of exacerbations **(Evidence A)**.
- Antioxidant mucolytics are recommended only in selected patients **(Evidence A)**.

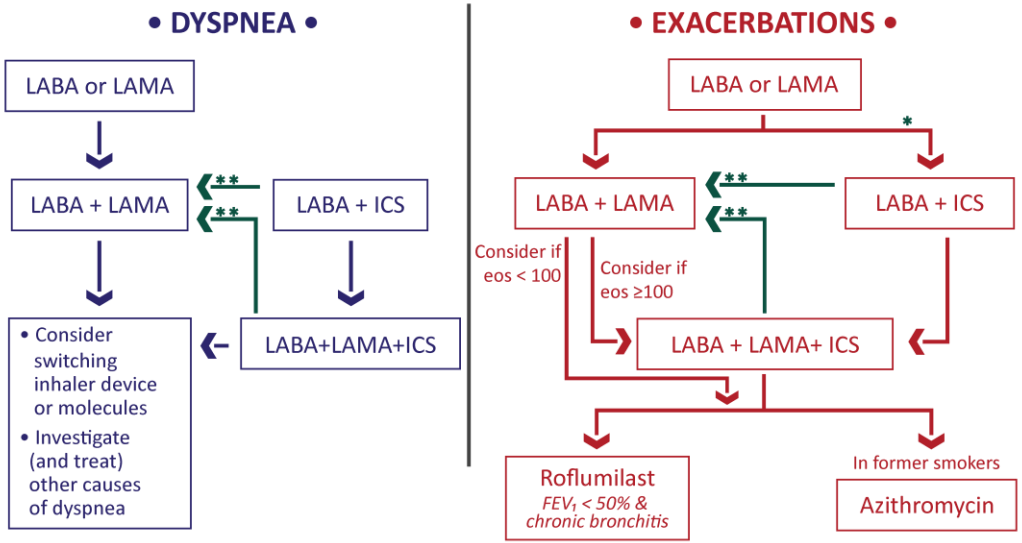
Treatment of Stable COPD

MANAGEMENT CYCLE



FOLLOW-UP PHARMACOLOGICAL TREATMENT

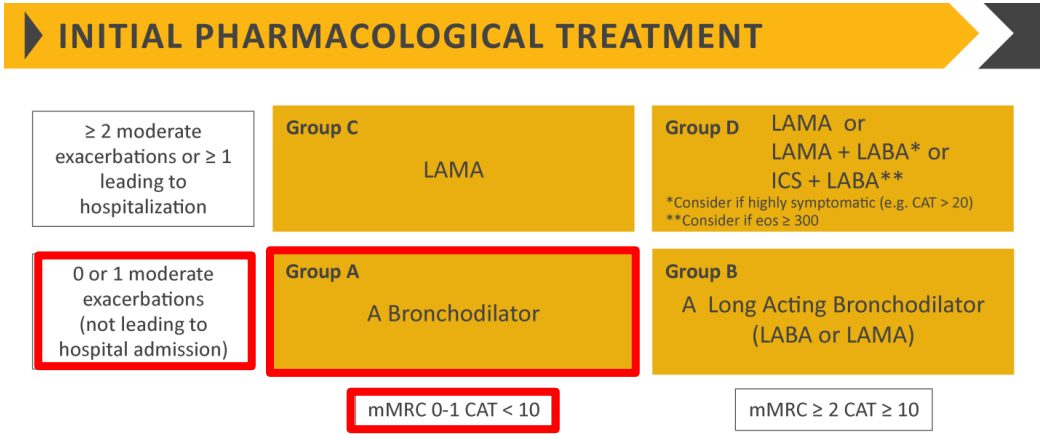
1. **IF RESPONSE TO INITIAL TREATMENT IS APPROPRIATE, MAINTAIN IT.**
2. **IF NOT:**
   - ✓ Consider the predominant treatable trait to target (dyspnea or exacerbations)
     - Use exacerbation pathway if both exacerbations and dyspnea need to be targeted
   - ✓ Place patient in box corresponding to current treatment & follow indications
   - ✓ Assess response, adjust and review
   - ✓ These recommendations do not depend on the ABCD assessment at diagnosis



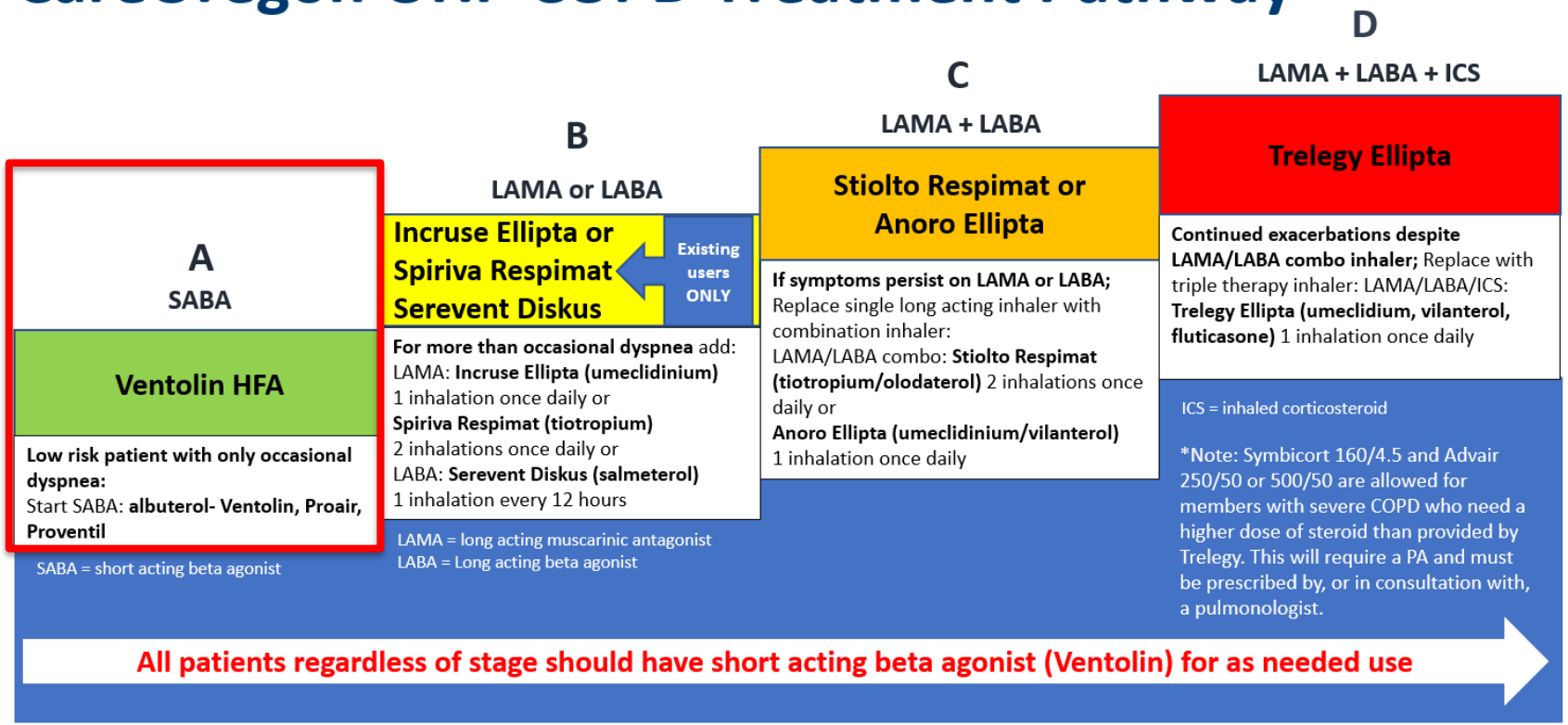
eos = blood eosinophil count (cells/µL)
** Consider if eos ≥ 300 or eos ≥ 100 AND ≥2 moderate exacerbations / 1 hospitalization*
*** Consider de-escalation of ICS or switch if pneumonia, inappropriate original indication or lack of response to ICS*

Group A

- All **Group A** patients should be offered bronchodilator treatment based on its effect on breathlessness. This can be either a short- or a long-acting bronchodilator.
- This should be continued if benefit is documented.



CareOregon OHP COPD Treatment Pathway



***Please note, Combivent has been de-emphasized in guidelines and should not be considered appropriate therapy for most COPD patients. If albuterol is not sufficient, the appropriate next step is the addition of long acting therapy.**

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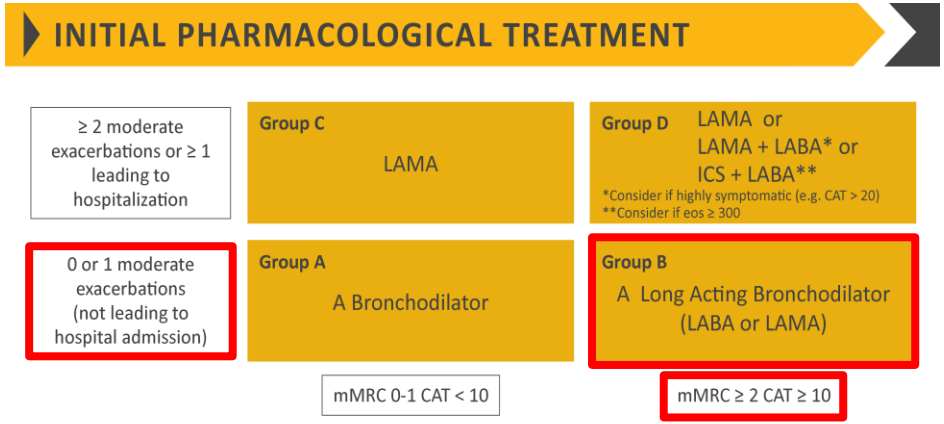
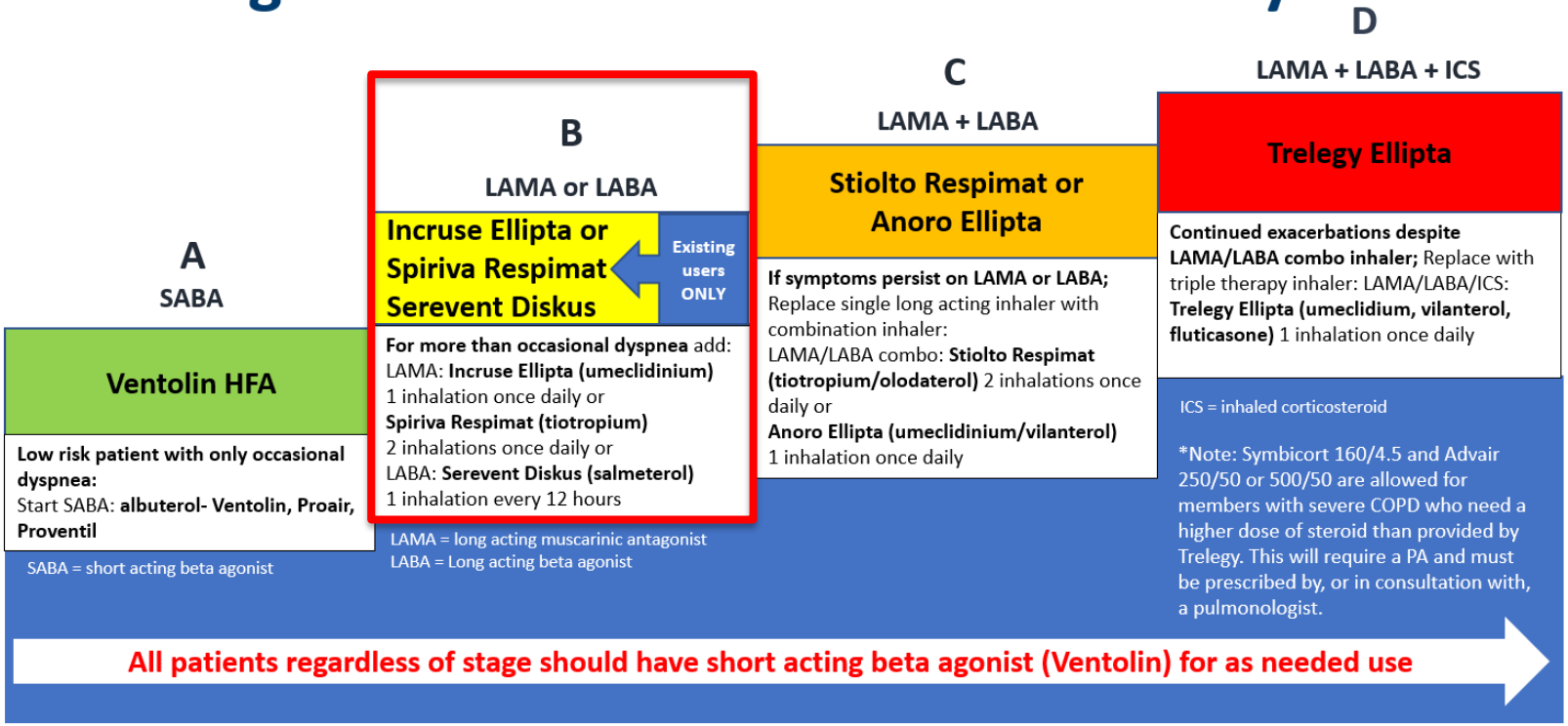
Group B

- Initial therapy should consist of a long acting bronchodilator (**LABA** or **LAMA**).
- Long-acting inhaled bronchodilators are superior to short-acting bronchodilators taken as needed i.e., *pro re nata* (prn) and are therefore recommended.



CareOregon OHP COPD Treatment Pathway



***Please note, Combivent has been de-emphasized in guidelines and should not be considered appropriate therapy for most COPD patients. If albuterol is not sufficient, the appropriate next step is the addition of long acting therapy.**

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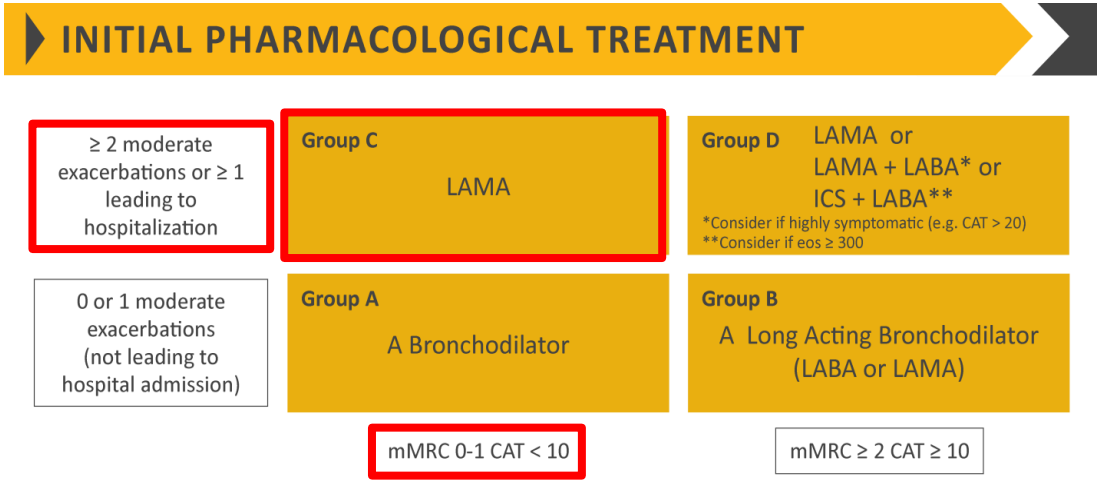
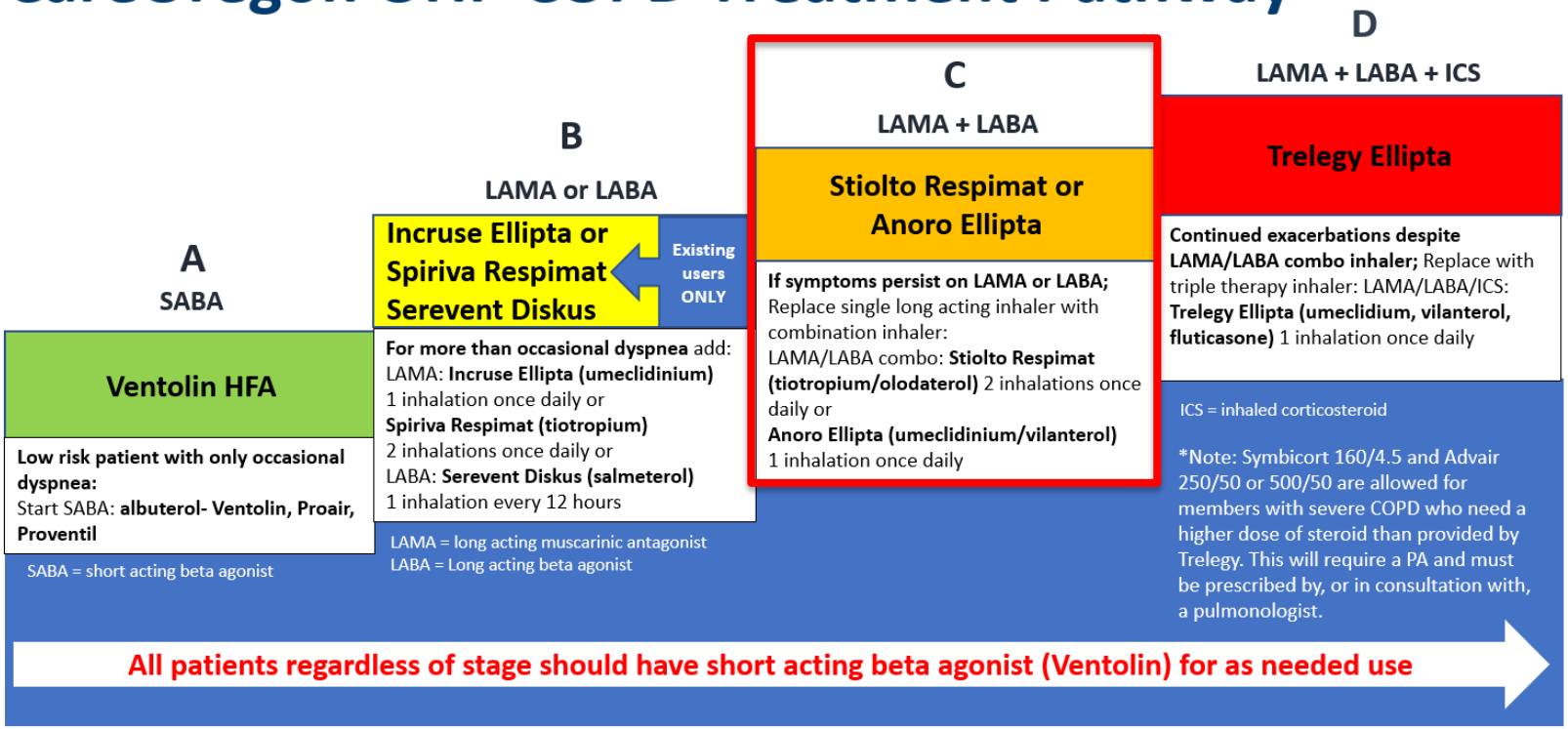
Group C

- Initial therapy should consist of a single long acting bronchodilator.
- In two head-to-head comparisons the tested LAMA was superior to the LABA regarding exacerbation prevention therefore we recommend starting therapy with a LAMA in this group.



CareOregon OHP COPD Treatment Pathway



***Please note, Combivent has been de-emphasized in guidelines and should not be considered appropriate therapy for most COPD patients. If albuterol is not sufficient, the appropriate next step is the addition of long acting therapy.**

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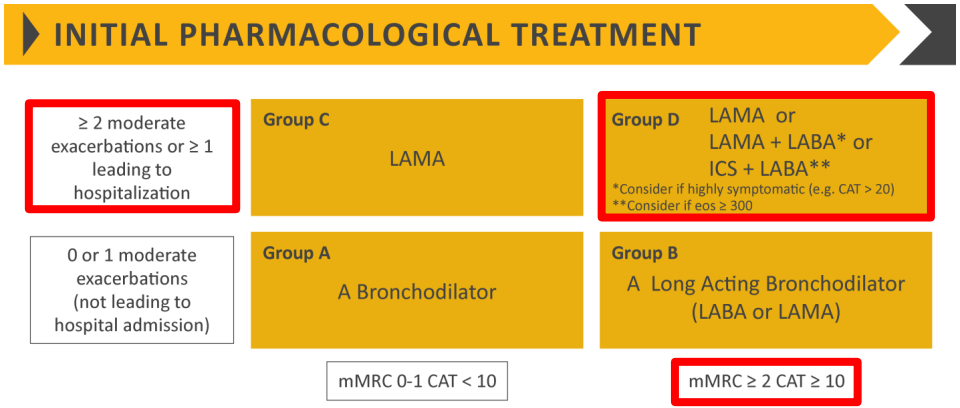
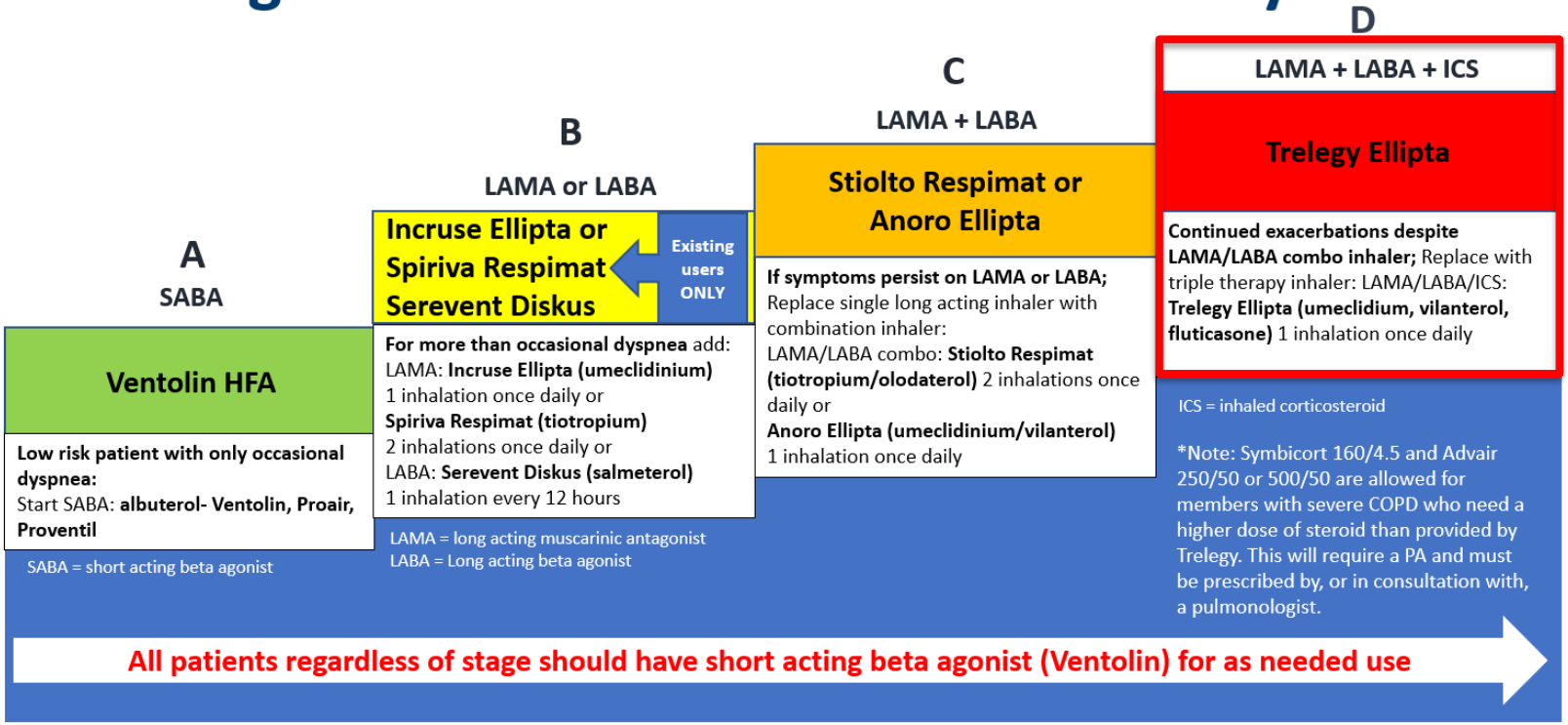
Group D

- In general, therapy can be started with a LAMA as it has effects on both breathlessness and exacerbations.
- For patients with more severe symptoms (order of magnitude of CAT™ ≥ 20), especially driven by greater dyspnea and/or exercise limitation, LAMA/LABA may be chosen as initial treatment based on studies with patient reported outcomes as the primary endpoint where LABA/LAMA combinations showed superior results compared to the single substances.
- An advantage of LABA/LAMA over LAMA for exacerbation prevention has not been consistently demonstrated, so the decision to use LABA/LAMA as initial treatment should be guided by the level of symptoms.



CareOregon OHP COPD Treatment Pathway



***Please note, Combivent has been de-emphasized in guidelines and should not be considered appropriate therapy for most COPD patients. If albuterol is not sufficient, the appropriate next step is the addition of long acting therapy.**

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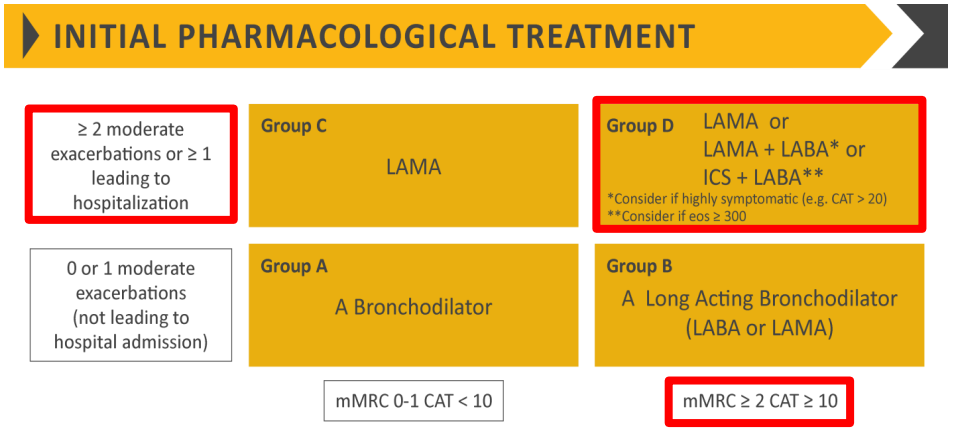
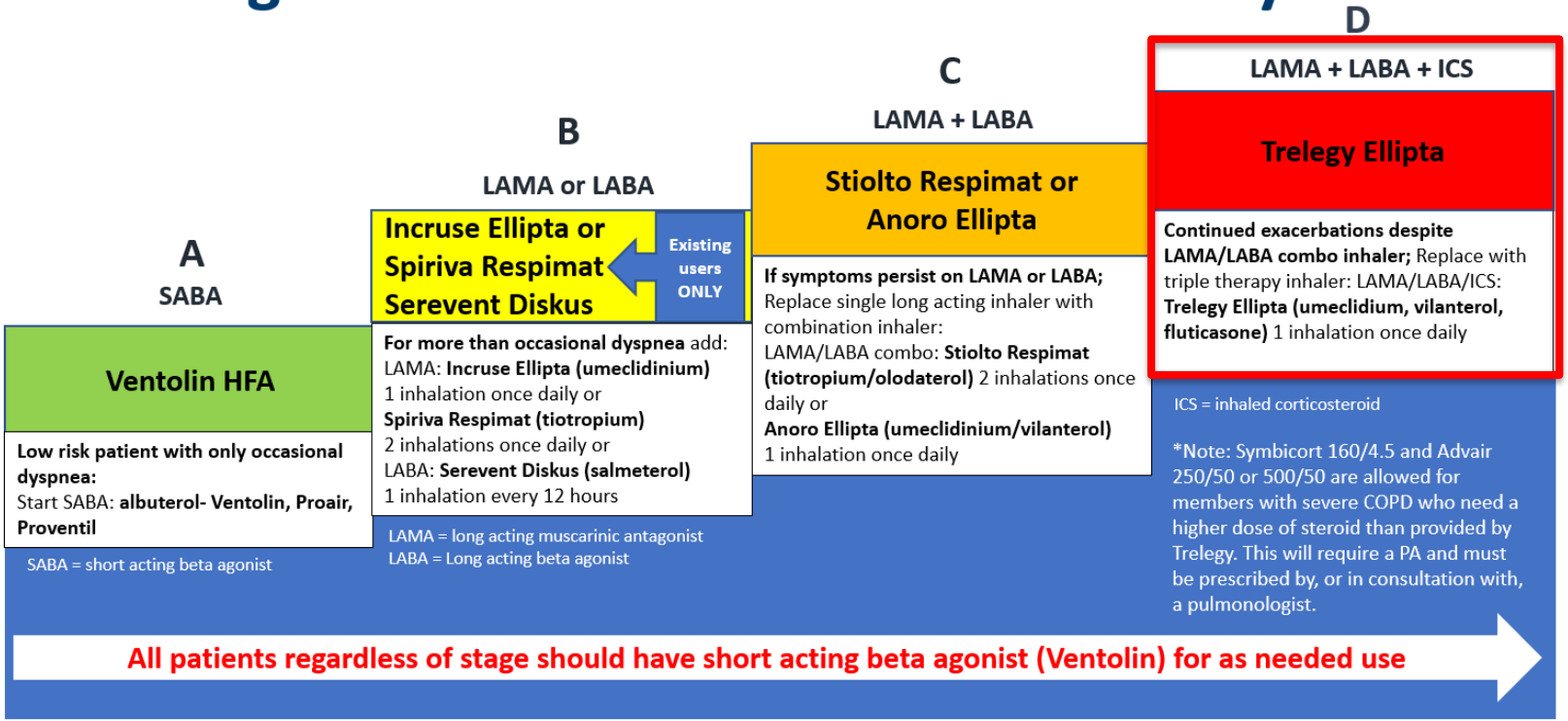
Group D

- In some patients, initial therapy with LABA/ICS may be the first choice.
- This treatment has the greatest likelihood of reducing exacerbations in patients with blood eosinophil counts ≥ 300 cells/µL.
- LABA/ICS may also be first choice in COPD patients with a history of asthma.
- ICS may cause side effects such as pneumonia, so should be used as initial therapy only after the possible clinical benefits versus risks have been considered.



CareOregon OHP COPD Treatment Pathway



***Please note, Combivent has been de-emphasized in guidelines and should not be considered appropriate therapy for most COPD patients. If albuterol is not sufficient, the appropriate next step is the addition of long acting therapy.**

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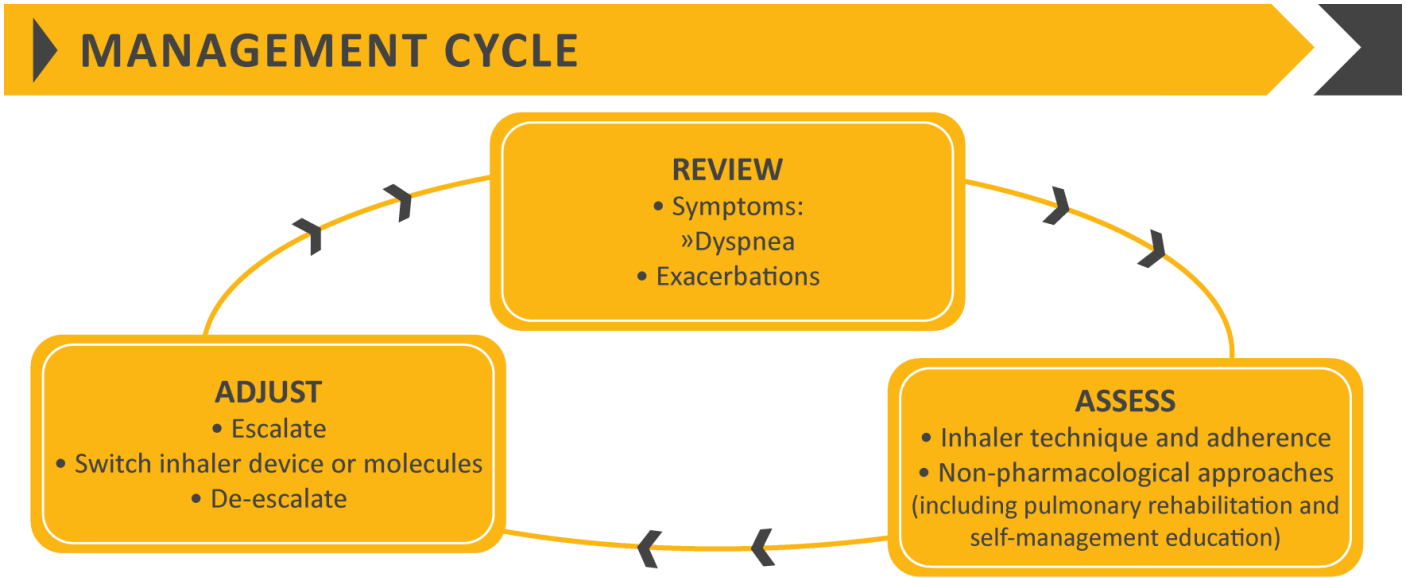
FOLLOW-UP pharmacological treatment

- Follow up pharmacological management should be guided by the principles of first ***review*** and ***assess***, then ***adjust*** if needed



Review, Assess, Adjust

- **Review**
  Review symptoms (dyspnea) and exacerbation risk.
- **Assess**
  Assess inhaler technique and adherence, and the role of non-pharmacological approaches.
- **Adjust**
  Adjust pharmacological treatment, including escalation or de-escalation. Switching inhaler device or molecules within the same class (e.g., using a different long acting bronchodilator) may be considered as appropriate. Any change in treatment requires a subsequent ***review*** of the clinical response, including side effects.

FOLLOW-UP pharmacological treatment

Exacerbations

- For patients with persistent exacerbations on ***long acting bronchodilator*** monotherapy, escalation to either LABA/LAMA or LABA/ICS is recommended. LABA/ICS may be preferred for patients with a history or findings suggestive of asthma.
- Blood eosinophil counts may identify patients with a greater likelihood of a beneficial response to ICS.
- For patients with one exacerbation per year, a peripheral blood level ≥ 300 eosinophils/µL identifies patients more likely to respond to LABA/ICS treatment.
- For patients with ≥ 2 moderate exacerbations per year or at least one severe exacerbation requiring hospitalization in the prior year, LABA/ICS treatment can be considered at blood eosinophil counts ≥ 100 cells/µL, as ICS effects are more pronounced in patients with greater exacerbation frequency and/or severity.

FOLLOW-UP pharmacological treatment

Exacerbations

- If patients treated with **LABA/LAMA/ICS** who still have exacerbations the following options may be considered:
  - **Add a macrolide.** The best available evidence exists for the use of azithromycin, especially in those who are not current smokers. Consideration to the development of resistant organisms should be factored into decision-making.
  - **Stopping ICS.** This can be considered if there are adverse effects (such as pneumonia) or a reported lack of efficacy. However, a blood eosinophil count ≥ 300 cells /µL identifies patients with the greatest likelihood of experiencing more exacerbations after ICS withdrawal and who subsequently should be followed closely for relapse of exacerbations.
  - **Add roflumilast.** This may be considered in patients with an FEV_1 < 50% predicted and chronic bronchitis, particularly if they have experienced at least one hospitalization for an exacerbation in the previous year.

Management of Exacerbations

COPD exacerbations are defined as an acute worsening of respiratory symptoms that result in additional therapy.

- They are classified as:
  - **Mild** (treated with short acting bronchodilators only, SABDs)
  - **Moderate** (treated with SABDs plus antibiotics and/or oral corticosteroids) or
  - **Severe** (patient requires hospitalization or visits the emergency room). Severe exacerbations may also be associated with acute respiratory failure.

Management of Exacerbations

OVERALL KEY POINTS:

- Maintenance therapy with long-acting bronchodilators should be initiated as soon as possible before hospital discharge.
- Systemic corticosteroids can improve lung function (FEV_1), oxygenation and shorten recovery time and hospitalization duration. Duration of therapy should not be more than 5-7 days.
- Antibiotics, when indicated, can shorten recovery time, reduce the risk of early relapse, treatment failure, and hospitalization duration. Duration of therapy should be 5-7 days.

Management of Exacerbations

Pharmacological treatment

The three classes of medications most commonly used for COPD exacerbations are:

- **Bronchodilators**
  - Although there is no high-quality evidence from RCTs, it is recommended that short-acting inhaled beta$_2$-agonists, with or without short-acting anticholinergics, are the initial bronchodilators for acute treatment of a COPD exacerbation.
- **Corticosteroids**
  - Data from studies indicate that systemic glucocorticoids in COPD exacerbations shorten recovery time and improve lung function (FEV_1). They also improve oxygenation, the risk of early relapse, treatment failure, and the length of hospitalization.
- **Antibiotics**

Inhaler Demo!

- https://www.nationaljewish.org/treatment-programs/medications/inhaled-medication-asthma-inhaler-copd-inhaler/instructional-videos

- Ellipta™
- Using a Respimat
- Metered-Dose Inhaler
- Diskus®
- Twisthaler®
- Handihaler®

Questions?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Exasperating Exacerbations and more!

Heather Stoecklin, RRT
Population Health Respiratory Therapist
CareOregon

Every Breath We'll Take:

Exacerbations –

An overview of GOLD guidelines and how the patient will present to the clinic

Non-pharmacological treatments –

Pulmonary Rehab can be your greatest resource

Durable Medical Equipment –

What your patient has at home.

Management of Exacerbations

- An exacerbation of COPD is defined as an acute worsening of respiratory symptoms that results in additional therapy.
- Exacerbations of COPD can be precipitated by several factors. The most common causes are respiratory tract infections.
- The goal for treatment of COPD exacerbations is to minimize the negative impact of the current exacerbation and to prevent subsequent events.
- Short-acting inhaled beta$_2$-agonists, with or without short-acting anticholinergics, are recommended as the initial bronchodilators to treat an acute exacerbation.

Management of Exacerbations

- Non-invasive mechanical ventilation should be the first mode of ventilation used in COPD patients with acute respiratory failure who have no absolute contraindication because it improves gas exchange, reduces work of breathing and the need for intubation, decreases hospitalization duration and improves survival.

- Following an exacerbation, appropriate measures for exacerbation prevention should be initiated (see **GOLD 2019** Chapter 3 and Chapter 4).

Management of Exacerbations

POTENTIAL INDICATIONS FOR HOSPITALIZATION ASSESSMENT*

- Severe symptoms such as sudden worsening of resting dyspnea, high respiratory rate, decreased oxygen saturation, confusion, drowsiness.
- Acute respiratory failure.
- Onset of new physical signs (e.g., cyanosis, peripheral edema).
- Failure of an exacerbation to respond to initial medical management.
- Presence of serious comorbidities (e.g., heart failure, newly occurring arrhythmias, etc.).
- Insufficient home support.

*Local resources need to be considered.

What will you see if your patient is having an exacerbation?

- Increased use of oxygen or increased liter flow
- Increased use of bronchodilators
- Sputum production will usually change
- more shortness of breath at night.
- Unusual sleepiness or confusion
- Headaches/blurry vision

Clarifying questions

- Can the patient talk in complete sentences?
  (if not, consider 911)
- When did the symptoms start?
- Have there been any changes in your cough frequency or sputum (color, consistency)?
- Are you currently taking Prednisone? What is your dose? Did you take it today?
- Tell me what inhalers you have taken today.
  (Ask for specifics vs a “Yes, I’ve taken them all)

Clarifying questions

- Have you missed any doses of your inhalers?
- How often have you used your rescue inhaler in the past 24 hours?
  (More than Q4 is a red flag)
- Do you use a spacer with your **rescue inhaler**?
  (**Everyone** should use a spacer)
- Is there a counter on your rescue inhaler? How many doses are left?
  (**Huge** cause of ED admissions)
- Do you have a Nebulizer? Have you taken it today? Do you get relief when you take a nebulizer treatment?
- What is your oxygen set at right now?
  (people will turn it up too high when SOB)
- Do you have a monitor to check your oxygen level?
- Do you have a **BIPAP** machine that you wear at night?
  (Different than a CPAP. A CPAP won't be very helpful, but a BIPAP can significantly reduce shortness of breath)

1 – 4 WEEKS FOLLOW-UP

- Evaluate ability to cope in his/her usual environment.
- Review and understanding treatment regimen.
- Reassessment of inhaler techniques.
- Reassess need for long-term oxygen.
- Document the capacity to do physical activity and activities of daily living.
- Document symptoms: CAT or mMRC.
- Determine status of comorbidities.

12 – 16 WEEKS FOLLOW-UP

- Evaluate ability to cope in his/her usual environment.
- Review understanding treatment regimen.
- Reassessment of inhaler techniques.
- Reassess need for long-term oxygen.
- Document the capacity to do physical activity and activities of daily living.
- Measure spirometry: FEV_1.
- Document symptoms: CAT or mMRC.
- Determine status of comorbidities.

Empty Inhaler Usage

- The method of floating an inhaler is no longer the correct way to tell if its empty. The change in propellant has made it impossible to tell by floating or shaking to feel for contents.
- The only way to tell is by using a counter or manually recording puffs taken.
- This change has led to an increase in the accidental use of empty inhalers.

Non-Pharmacological Treatments

Non-Pharmacological Treatment

- Education and self-management
- Physical activity
- **Pulmonary rehabilitation programs**
- Exercise training
- Self-management education
- End of life and palliative care
- Nutritional support
- Vaccination
- Oxygen therapy

Non-Pharmacological Treatment

Education & self-management

- Based on GOLD groups, personalized design could include:
  - **Groups A, B, C & D** – addressing behavioral risk factors, including smoking cessation, **maintaining or increasing physical activity**, and ensuring adequate sleep and a healthy diet.
  - **Groups B & D** – learning to self-manage breathlessness, energy conservation techniques, and stress management strategies.
  - **Groups C & D** – avoiding aggravating factors, monitoring and managing worsening symptoms, having a written action plan and maintaining **regular contact/communication with a healthcare professional.**
  - **Group D** – discussing with their healthcare providers palliative strategies and advance care directives.

Non-Pharmacological Treatment

Pulmonary rehabilitation

- Patients with high symptom burden and risk of exacerbations (Groups B, C and D), should be encouraged to take part in a formal rehabilitation program that includes setting patient goals and is designed and delivered in a structured manner, taking into account the individual's COPD characteristics and comorbidities.
- The components of pulmonary rehabilitation may vary but evidence-based best practice for program delivery includes: structured and supervised exercise training, smoking cessation, nutrition counseling, and self-management education.

Pulmonary Rehabilitation videos

Understanding Pulmonary Rehabilitation Part 1

https://www.youtube.com/watch?v=3goKl9Vr8iw

Understanding Pulmonary Rehabilitation Part 2

https://www.youtube.com/watch?v=cthKnGK6Gzs

Inhaler Training Videos

http://www.copdfoundation.org/Learn-More/For-Patients-Caregivers/Educational-Video-Series/Inhaler-Training-Videos.aspx

Non-pharmacological treatment summary

KEY POINTS FOR THE USE OF NON-PHARMACOLOGICAL TREATMENTS

EDUCATION, SELF-MANAGEMENT AND PULMONARY REHABILITATION

- Education is needed to change patient's knowledge but there is no evidence that used alone it will change patient behavior .
- Education self-management with the support of a case manager with or without the use of a written action plan is recommended for the prevention of exacerbation complications such as hospital admissions **(Evidence B)**.
- Rehabilitation is indicated in all patients with relevant symptoms and/or a high risk for exacerbation **(Evidence A)**.
- Physical activity is a strong predictor of mortality **(Evidence A)**. Patients should be encouraged to increase the level of physical activity although we still don't know how to best insure the likelihood of success.

VACCINATION

- Influenza vaccination is recommended for all patients with COPD **(Evidence A)**.
- Pneumococcal vaccination: the PCV13 and PPSV23 are recommended for all patients> 65 years of age, and in younger patients with significant comorbid conditions including chronic heart or lung disease **(Evidence B)**.

NUTRITION

- Nutritional supplementation should be considered in malnourished patients with COPD **(Evidence B)**.

Summary

END OF LIFE AND PALLIATIVE CARE

- All clinicians managing patients with COPD should be aware of the effectiveness of palliative approaches to symptom control and use these in their practice **(Evidence D)**.
- End of life care should include discussions with patients and their families about their views on resuscitation, advance directives and place of death preferences **(Evidence D)**.

TREATMENT OF HYPOXEMIA

- In patients with severe resting hypoxemia long-term oxygen therapy is indicated **(Evidence A)**.
- In patients with stable COPD and resting or exercise-induced moderate desaturation, long term oxygen treatment should not be routinely prescribed. However, individual patient factors may be considered when evaluating the patient's needs for supplemental oxygen **(Evidence A)**.
- Resting oxygenation at sea level does not exclude the development of severe hypoxemia when travelling by air **(Evidence C)**.

TREATMENT OF HYPERCAPNIA

- In patients with severe chronic hypercapnia and a history of hospitalization for acute respiratory failure, long term noninvasive ventilation may be considered **(Evidence B)**.

INTERVENTION BRONCHOSCOPY AND SURGERY

- Lung volume reduction surgery should be considered in selected patients with upper-lobe emphysema **(Evidence A)**.
- Bronchoscopic lung volume reduction interventions may be considered in selected patients with advanced emphysema **(Evidence B)**.
- In selected patients with a large bulla surgical bullectomy may be considered **(Evidence C)**.
- In patients with very severe COPD (progressive disease, BODE score of 7 to 10, and not candidate for lung volume reduction) lung transplantation may be considered for referral with at least one of the following: (1) history of hospitalization for exacerbation associated with acute hypercapnia (Pco_2 >50 mm Hg); (2) pulmonary hypertension and/or cor pulmonale, despite oxyqen therapy; or (3) FEV_1 < 20% and either DLCO < 20% or homogenous distribution of emphysema **(Evidence C)**.

Durable Medical Equipment

This is what the typical COPD patient can expect to end up with in their home.

- Oxygen Concentrator
- Oxygen tanks
- Nebulizer
- BiPAP/CPAP
- Walker
- Bedside commode
- Shower chair
- Manual wheelchair
- Electric scooter/wheelchair

DME is painful. This might help.

- Talk to your patients about their DME company satisfaction and then use this information to narrow down what companies you use. You could even create a quick 2-3 answer questionnaire if this is a real area of concern for your clinic.
  1. **Do you have medical equipment at your home? If yes, who is the company that provides this for you?**
  2. **Do you know how to contact them if you need something?**
  3. **Do you feel satisfied with the customer service you receive from your equipment provider?**

  (these questions are for data gathering purposes. Please contact your company directly if you have equipment needs)
- Have a DME point person in your clinic and have them develop a strong working relationship with at least one person in the company/companies you decide to work with.

Oxygen

- Can be prescribed as continuous, with exertion or nocturnal only. This is determined by the test results used to qualify the patient.
- Early detection of nocturnal desaturation can be done with a simple overnight oximetry test. This test can be done at home and ordered from local DME companies.
- A resting daytime saturation of 93% or less may be a good indicator of nocturnal desaturations.

Nebulizers

- Often prescribed for patients who are not getting enough relief from rescue inhalers or who have a very poor technique that cannot be resolved.
- Also can be used to combine multiple meds into one treatment for the patient who is overwhelmed or confused with inhaler prescriptions.
- Does not require a PA (for CareOregon members) and can be obtained very quickly from any of the listed companies.

Sleep Equipment

- Your patient may be on a CPAP or BIPAP machine for a sleep disorder or in an effort to treat chronic hypercapnia.
- This equipment can feel very invasive and is sometimes the most difficult to get used to.
- Encourage desensitization techniques
- Reach out to DME companies for patient support or for mask/equipment issues
- Talk to specialists if your patient is unable to adjust to the current therapy. There are often other options.

Non-invasive positive pressure ventilation for stable COPD

Some Durable Medical Equipment Providers*

NW Medical 503-234-6219

Apria 503-258-2200

Norco 503-288-8174

Lincare 503-624-8884

Providence 503-215-1111

Sleep Technology 503-496-5239

*may not be all-inclusive

Link to Gold Standard website:

https://goldcopd.org/gold-reports/

Link to Gold Patient guide:

https://goldcopd.org/wp-content/uploads/2016/04/GOLD_PatientGuide_2012.pdf

Questions?


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Behavioral Health Integration

Laura Fisk, PsyD
Behavioral Health Innovation Specialist
CareOregon

Behavioral Health Clinician

- Primary Care Behavioral Health:

  Definition: “The PCBH model is a **team-based primary care approach to managing behavioral health problems and biopsychosocially-influenced health conditions.** The model’s main goal is to enhance the primary care team’s ability to manage and treat such problems/conditions, with resulting improvements in primary care services for the entire clinic population”
  (Reiter, Dobmeyer & Hunter, 2018)

- Who Are Behavioral Health Clinicians?

  BHC Definition: “The BHC works as a generalist and an educator who provides high volume services that are accessible, team-based, and a routine part of primary care. Specifically, the BHC assist in the care of patients of any age and with any health condition..”
  (Reiter, Dobmeyer & Hunter, 2018)

Why Involve BHCs?

- Advance stages of COPD can significantly decrease functioning and quality of life.
- Identifiable health behaviors associated with COPD
- Smoking is one of the most common risk factors
- Poorer prognosis with Depression & Anxiety

When to bring in BHC?

- Current smoker and ready to quit
- Struggling with medical adherence.
- Trauma Informed Approach
- Struggling with/or suspected depression and anxiety
- Needs support for health behavior change.
- Motivational Interviewing to change
- Increase support system
- Skill-building

Coordination of Care

Depression or Anxiety?

- 40% prevalence rate of comorbid depression and COPD in older adults

  (Yohannes, Baldwin & Connolly, 2000),
- 36% prevalence of anxiety symptoms with COPD in older adults

  (Yohannes, Baldwin & Connolly, 2000)
- Decreased functioning, loss of roles, and decreased self-efficacy can contribute to depression and anxiety that may occur with the progression of COPD.

  (Hunter, et al. 2017)
- BHC can help determine if physiological symptoms experienced with COPD are solely diagnosis of COPD or an underlying depression or anxiety, as well.

Assessing for Smoking Cessation

- Smokers who received assistance from two or more clinician types are 2.4-2.5 times as likely to quit successfully for 5 or more months

  (Fiore e at., 2006)

- BHCs can assess smoking cessation prior to addressing other health behaviors

Tips on introducing BHC

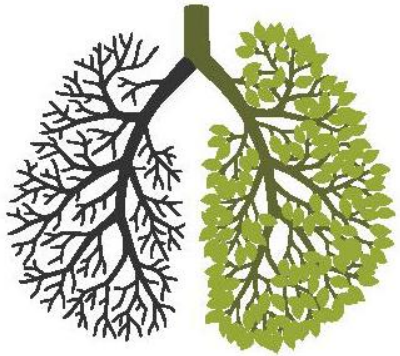
“This is _(BHC)_, he/she is an expert in smoking cessation.”

“I would like you to meet _(BHC)_. He/She is a member on our team who can help you learn strategies to deal with anxiety.”

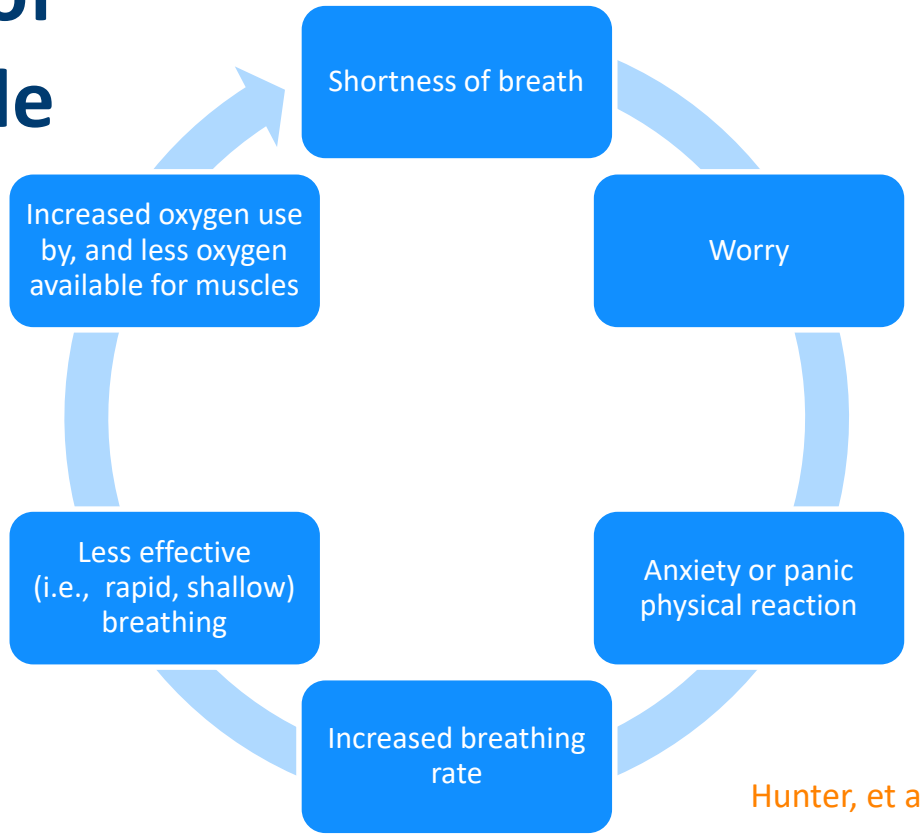
“At the end of our visit, I would like to go get _(BHC)_. They sometimes work with our patients to help build social supports.

What are BHC's interventions?

- Exercise Training
- Relaxation Training
  - Diaphragmatic Breathing
  - Pursed-lip Breathing
- CBT
- Adherence to medical recommendations
- Anxiety-dyspnea cycle
- Tobacco Cessation
- Trauma Informed Care/Approach



Shortness of Breath Cycle



Hunter, et al., 2017

Questions?

COPD: Clinician Update

Rhett Cummings, MD
Pulmonary Medicine; Critical Care Medicine
The Oregon Clinic

THE OREGON CLINIC

PCP – Specialist Communication

PCP to Specialist Communication – History and Consult Reason		Specialist to PCP Communication – Consult Results and Advice	
PCPs Sending	Specialists Receiving	Specialists Sending	PCPs Receiving
69%	35%	81%	62%

Source: *Arch Intern Med.* 2011;171(1):56-65. doi:10.1001/archinternmed.2010.480

PCP – Specialist Communication

4 Steps to Improve Coordination of Care

- Develop a coordination relationship
- Prepare and maintain referral agreements and care plans
- Improve access to specialty care
- Expand access to information between providers

Source: *ACP.* High Value Care Coordination Project

THE OREGON CLINIC

Care Coordination Agreement

From PCP:

- Specific clinical question
- Urgency
- Referral Type
  - Pre-visit advice
  - Non face-to-face
  - Procedure
  - Consult
  - Co-management with shared care
  - Co-management with principle care
  - Full responsibility
- Pertinent clinical data

Source: *ACP.* High Value Care Coordination Project

Care Coordination Agreement

From Specialist:

- Review referral requests and triage according to urgency
  - Reserve spaces in schedule to allow for urgent care
  - Notify referring primary care practice of recognized referral guidelines and inappropriate referrals
  - Agree to engage in pre-referral consult if requested
- Provide adequate information in a timely manner
- Indicate acceptance of referral category or suggest alternate option and reasoning for change
- Communicate secondary referrals to PCP
- Notify PCP of no-shows and cancellations

Source: *ACP.* High Value Care Coordination Project

When to refer COPD to Pulmonology

Consider for:

- GOLD stage C or D

  or

- difficult-to-control symptoms

  or

- frequent exacerbations

Diagnostic uncertainty and exclusion of asthma
Unusual symptoms such as hemoptysis
Rapid decline in FEV_1
Suspected severe COPD
Onset of cor pulmonale
Assessment of home oxygen therapy
Assessing need for pulmonary rehabilitation
Bullous lung disease
COPD <40 years of age
Assessment for lung transplantation or LVRS
Frequent chest infections
Dysfunctional breathing

CareOregon COPD Referral Template

Current smoker or history of smoking?	Y / N
COPD exacerbation over the last year? • Number of outpatient exacerbations over last year: • Number of ED visits or hospitalizations over the last year:	Y / N
Does the patient have dyspnea?	Y / N
Can the patient walk >100 m w/o stopping due to dyspnea?	Y / N
Spirometry performed within the last year?	Y / N
Is the patient on a long acting inhaler?	Y / N
Has the patient had a CXR within the last year?	Y / N

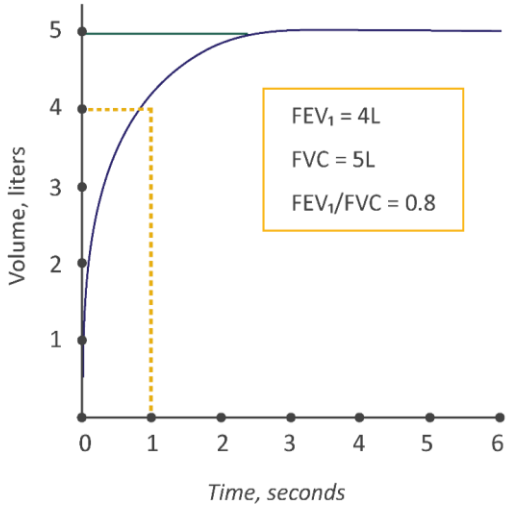
COPD DIAGNOSIS

- SYMPTOMS
- RISK FACTORS
- SPIROMETRY

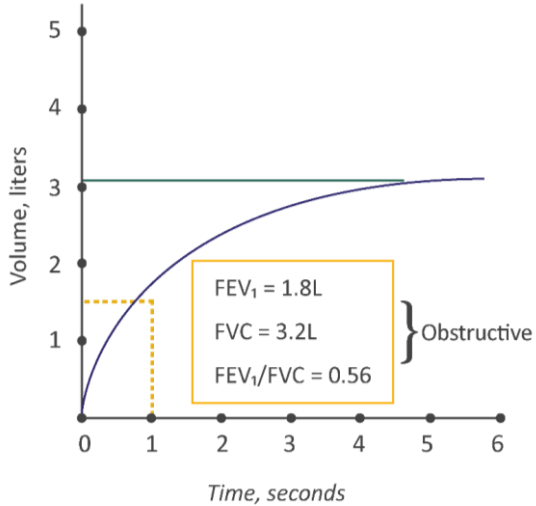
OTHER ASSESSMENT

- EXACERBATIONS
- CO-MORBIDITIES

SPIROMETRY - NORMAL TRACE



SPIROMETRY - OBSTRUCTIVE DISEASE



THE OREGON CLINIC

THE GOLD REFINED ABCD ASSESSMENT TOOL

Diagnosis = **Assessment of airflow limitation** + **Assessment of symptoms/risk of exacerbations**

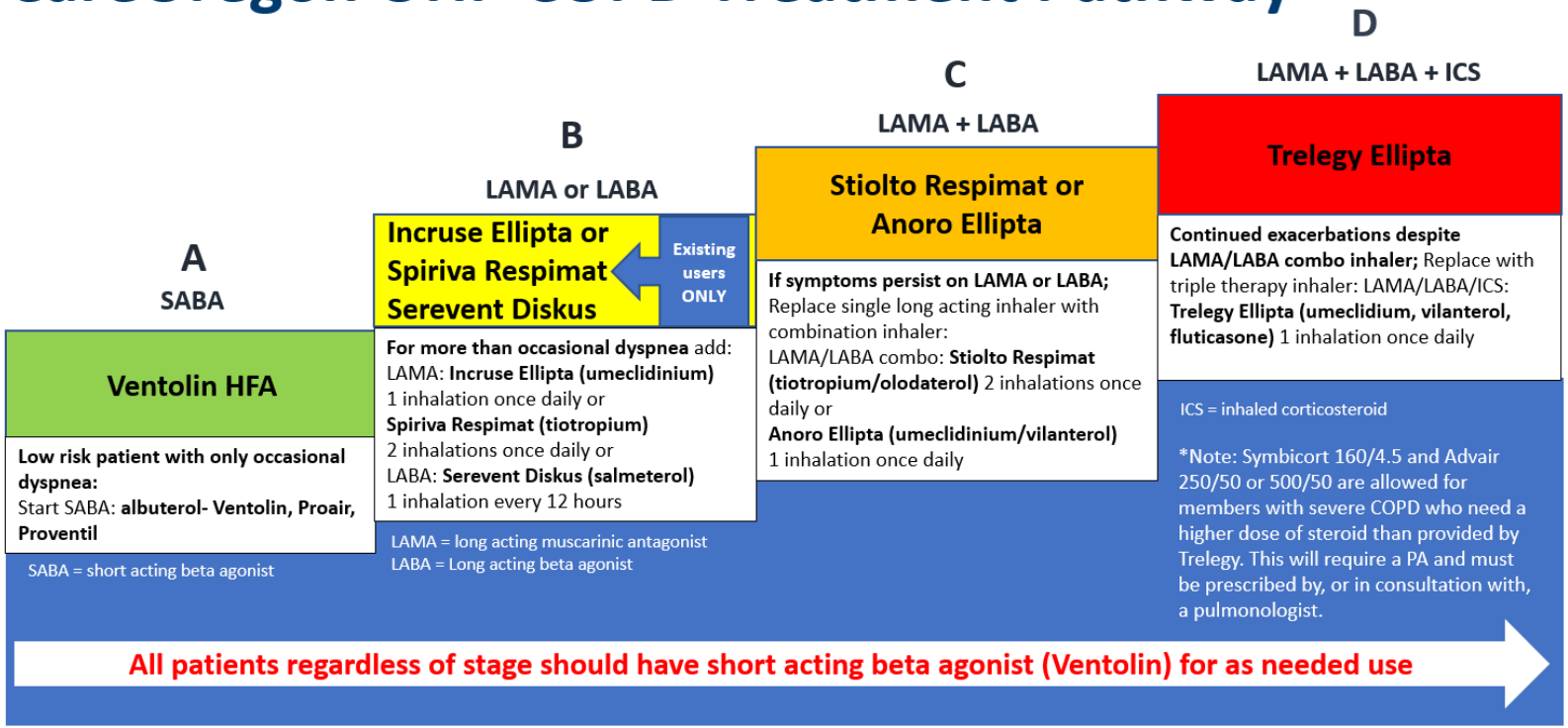
FEV1/FVC<0.7

Grade	FEV_1 (% pred.)
1	≥80
2	50-79
3	30-49
4	<30

Exacerbation History	mMRC 0-1 CAT < 10 CCQ < 1	mMRC 2+ CAT 10+ CCQ 1+
≥ 2 or ≥1 leading to hospitalization	C	D
0 or 1 (not leading to hospital admission)	A	B

Grade: 3, 4 / 1, 2

CareOregon OHP COPD Treatment Pathway



***Please note, Combivent has been de-emphasized in guidelines and should not be considered appropriate therapy for most COPD patients. If albuterol is not sufficient, the appropriate next step is the addition of long acting therapy.**

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Questions?

Thank You!