Curbside Consults

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Course Disclosures

I have no disclosures, or conflicts of interest related to this subject or talk.

Full Disclosures

I'm not as old as I look &

I also payed too much for my child to get into a community college

Learning Objectives

- Hey Doc, Can I ask you something? Defining the curbside consult.
  - Define the reason and risk of the curbside consult and outline if it helps patient care
- Hey Doc, Can I ask you something? Is AECOPD important?
  - Define the reason and risk of AECOPD and outline its significance
- Hey Doc, Can I ask you something? Does that AECOPD patient need an antibiotic?
  - Review the literature, on the use of antibiotics in AECOPD and its importance

The Curbside Consult

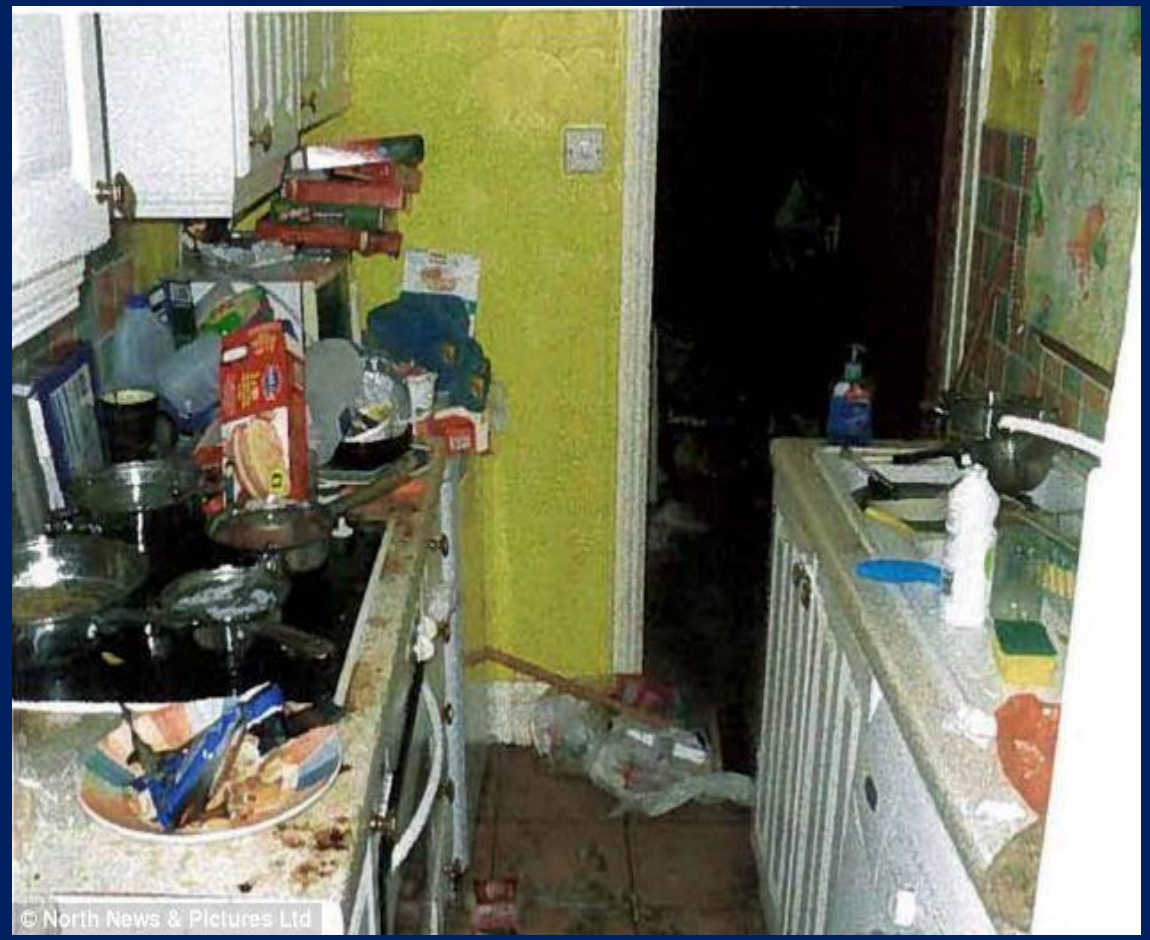
- In an study, hospitalists reported that they seek a curbside consultation for these reasons:
    - Confirm what they already know;
    - Get quick answers to a question;
    - Continue their medical education;
    - Determine if a formal consultation is called for;
    - Negotiate an appropriate course of treatment for a particular patient;
    - Spread the emotional risk during a difficult case;
    - Create or sustain camaraderie with physician colleges;
    - Find like thinkers among their physician colleagues;
    - Monitor their own knowledge; and
    - Obtain help to get out of a difficult situation.

Manian FA. Curbside consultations: a closer look at a common practice. *JAMA*. 1996;275(22):145-147.
Perley CM. Physician use of the curbside consultation to address information needs. *J Med Libr Assoc*. 2006 April;94(2);137-144.
Pearson SD, Moreno R, Trnka Y. Informal consultations provided to general internists by the gastroenterology department of an HMO. *J Gen Intern Med*. 1998 July;13(7):435-438.

The Curbside View

Burden M, Sarcone E, Keniston A, Statland B, Taub JA, Allyn RL, Reid MB, Cervantes L, Frank MG, Scaletta N, Fung P, Chadaga SR, Mastalerz K, Maller N, Mascolo M, Zoucha J, Campbell J, Maher MP, Stella SA, Albert RK, Curbside vs Formal Consultation. *J. Hosp. Med* 2013;1;31-35. doi:10.1002/jhm.1983

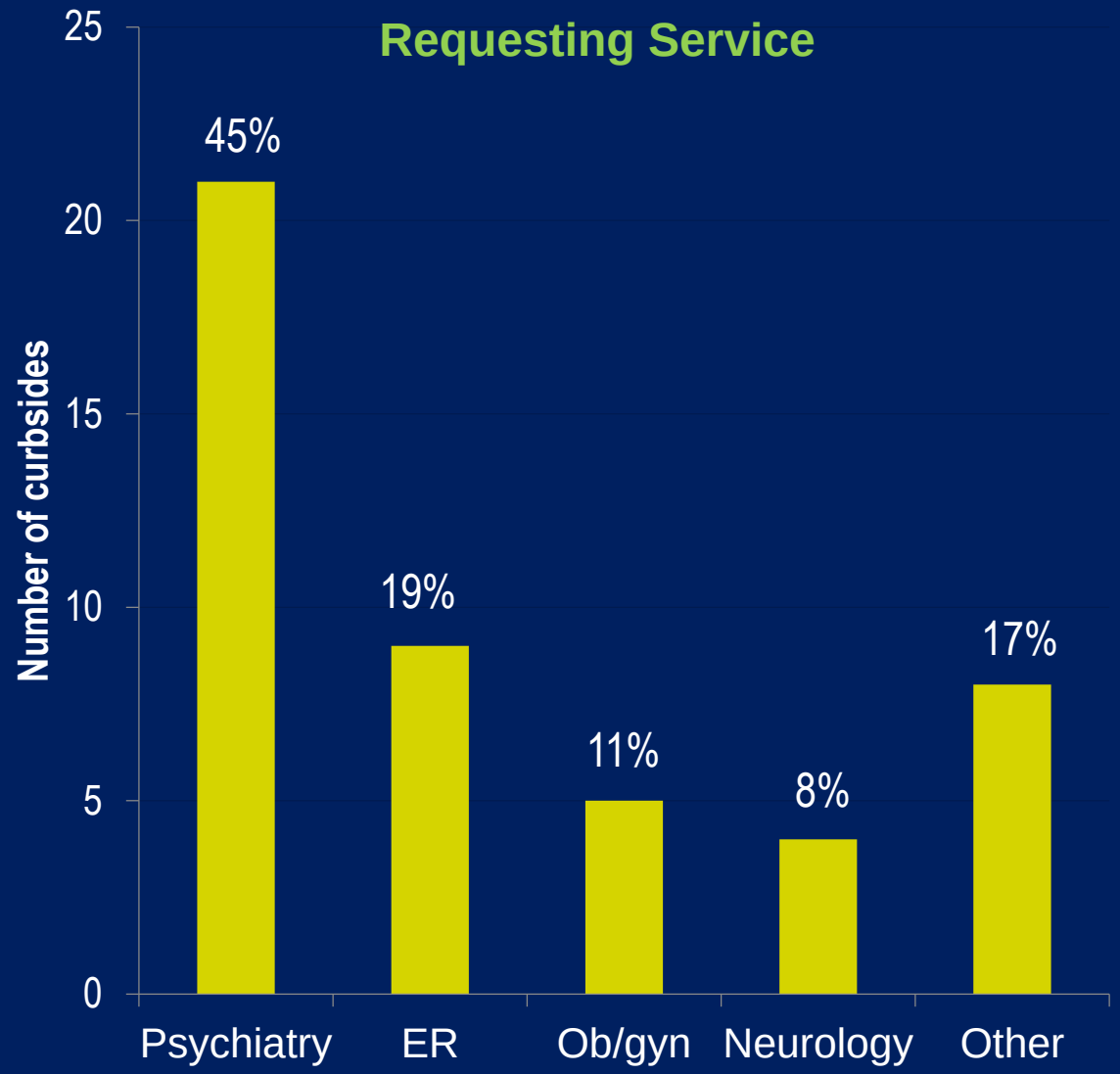
The Formal View

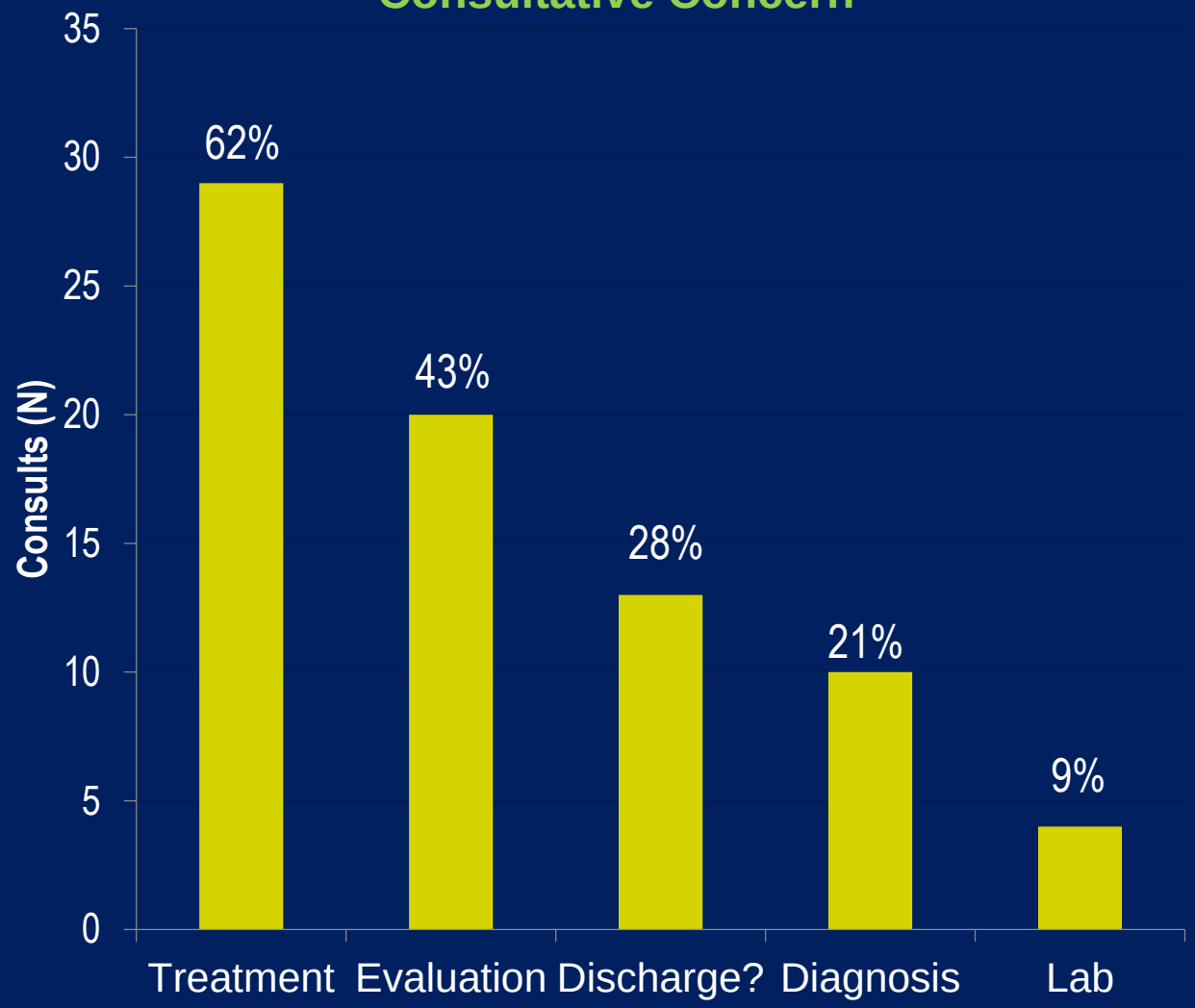


Curbsides – A Study

- Prospective Cohort
  - Quality improvement study
- Denver Health Sciences
  - 500 Bed university-affiliated urban safety net hospital
- 18 Hospitalist Physicians with Curbside
  - 50 Curbside consults, 47 consults with both curbside + formal consults placed

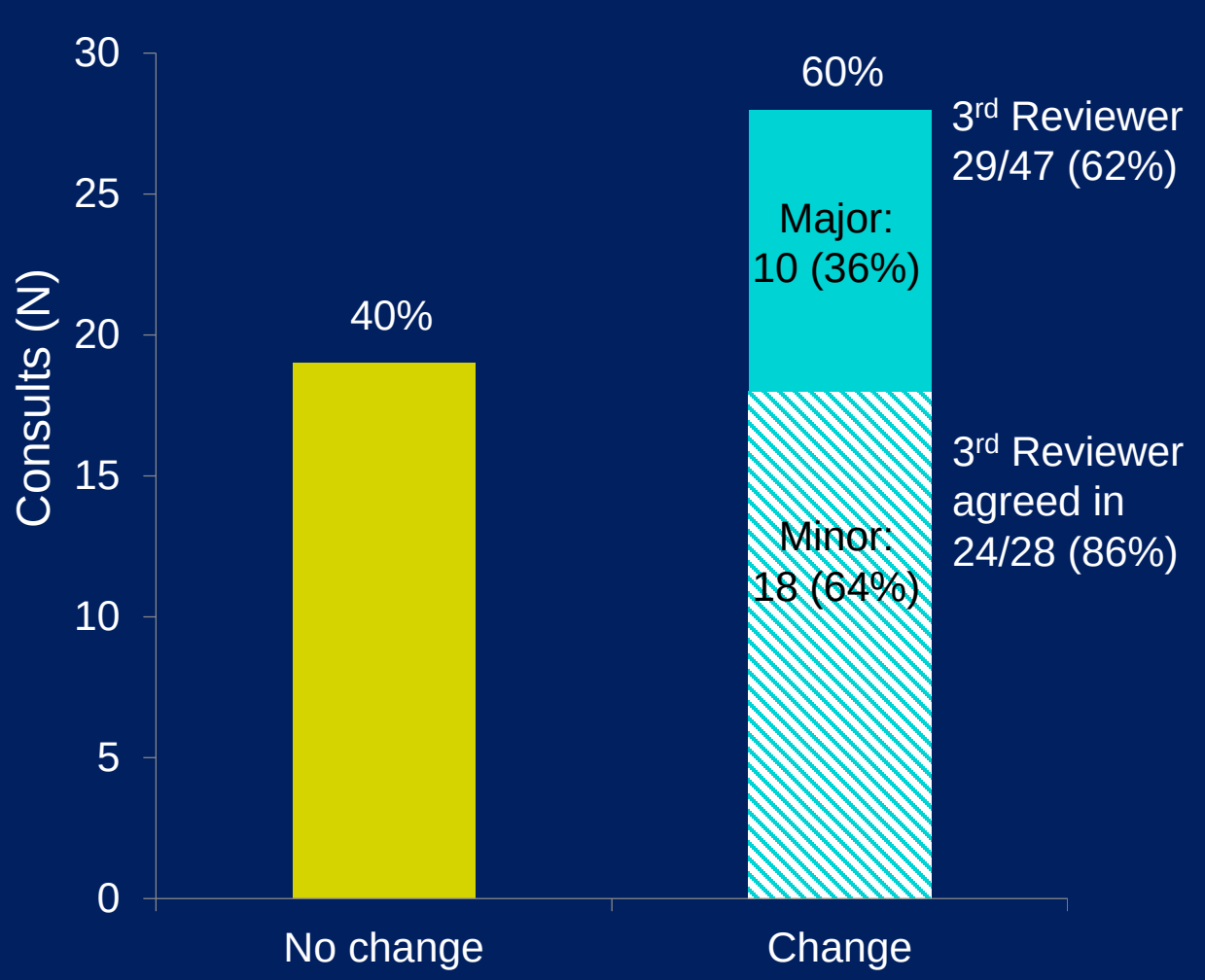
Burden M, Sarcone E, Keniston A, et al., Curbside vs Formal Consultation. *J. Hosp. Med* 2013;1;31-35. doi:10.1002/jhm

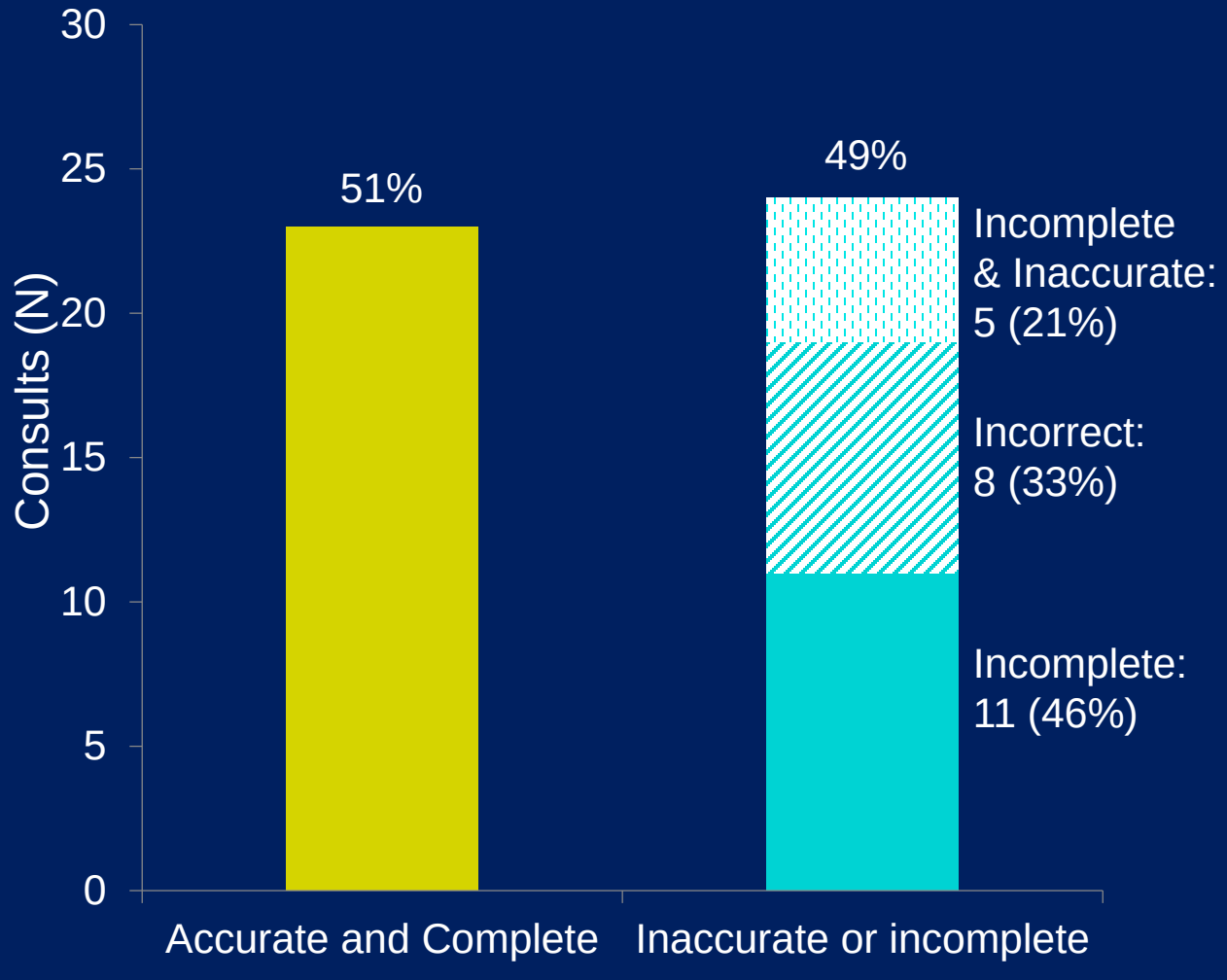




Burden M, Sarcone E, Keniston A, et al., Curbside vs Formal Consultation. *J. Hosp. Med* 2013;1;31-35. doi:10.1002/jhm

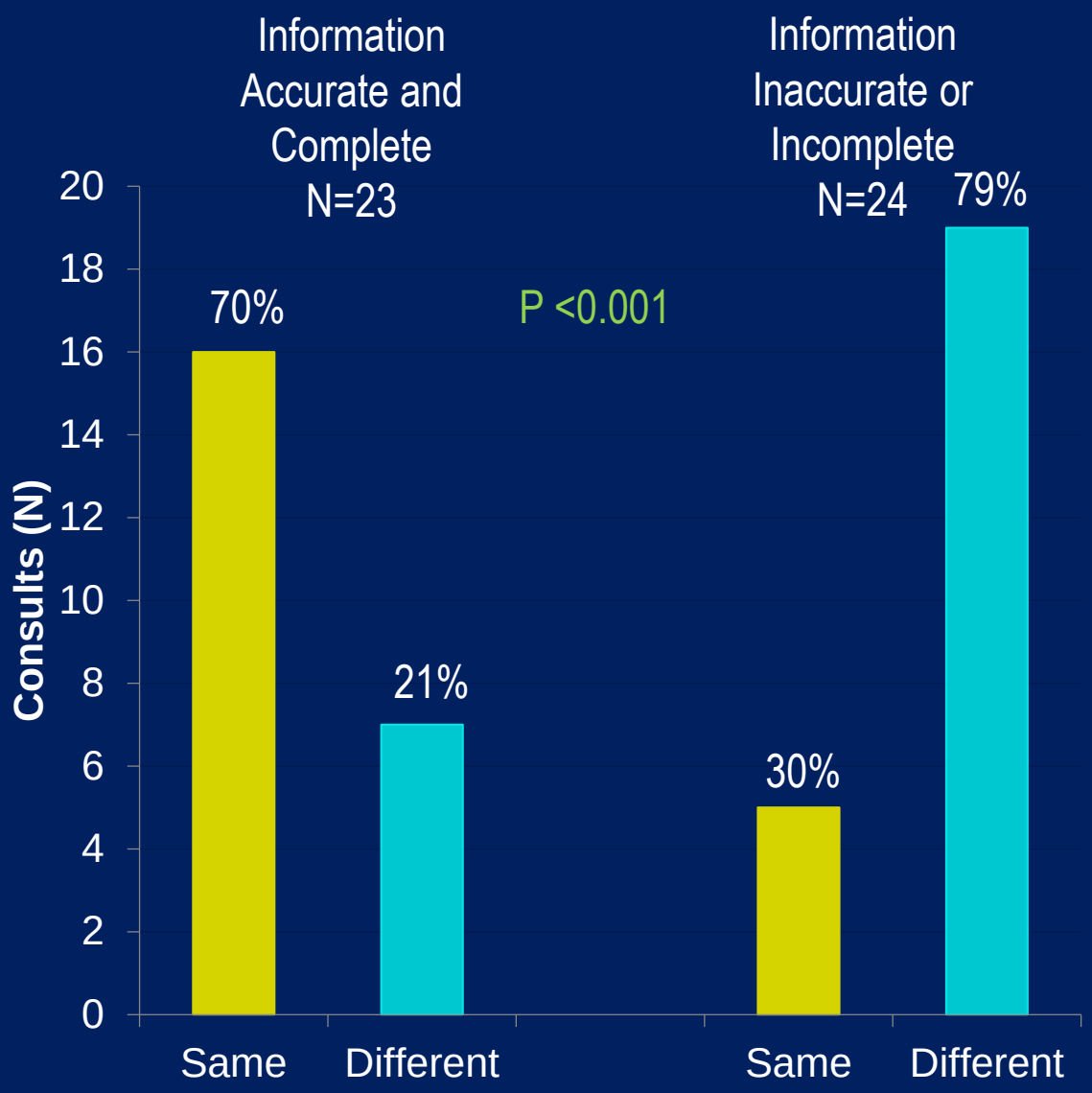
After the completion of the formal consultation, the advise rendered



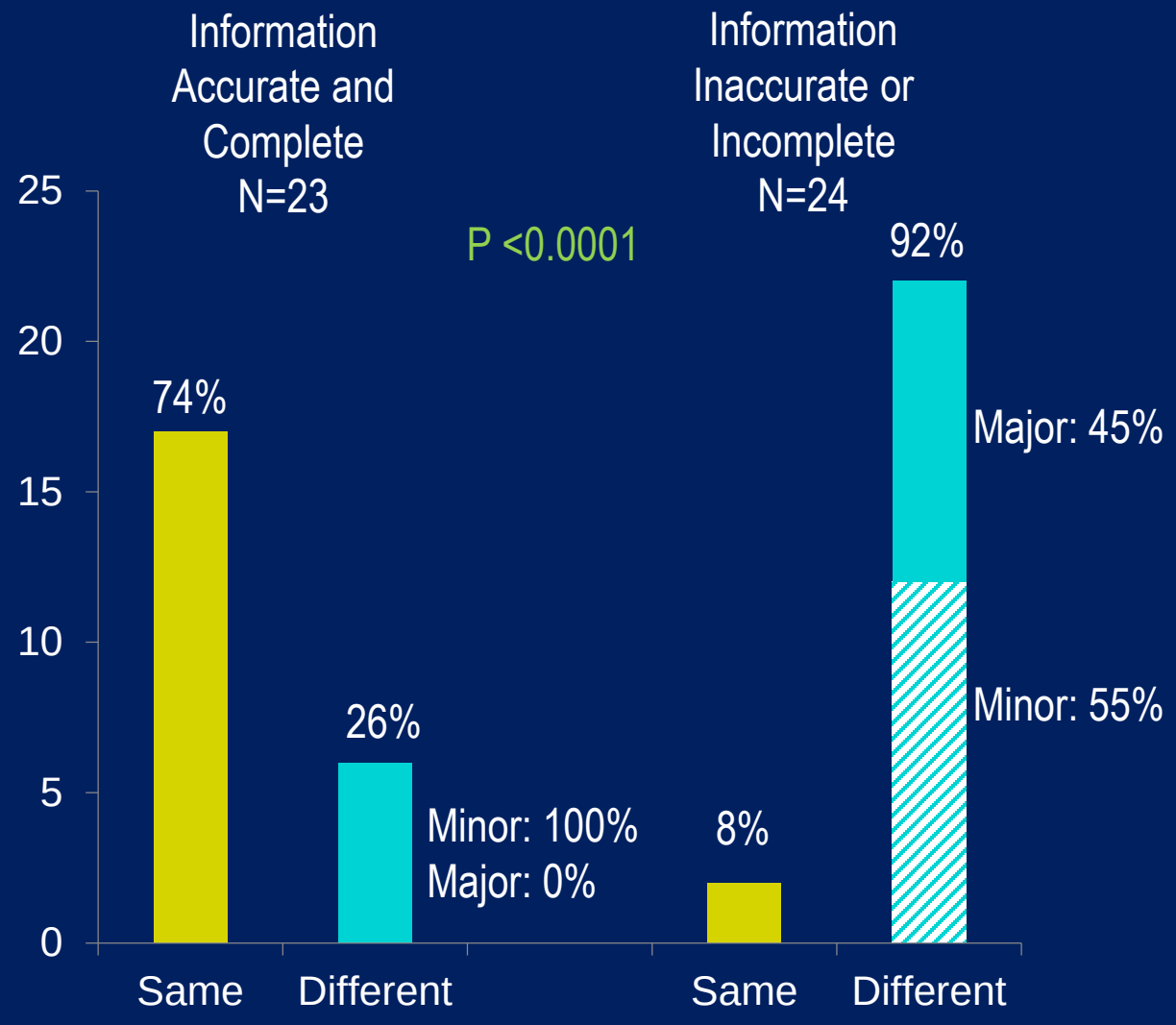


Burden M, Sarcone E, Keniston A, et al., Curbside vs Formal Consultation. *J. Hosp. Med* 2013;1;31-35. doi:10.1002/jhm

When inaccurate or incomplete information was obtained, the advise given in the formal consultation

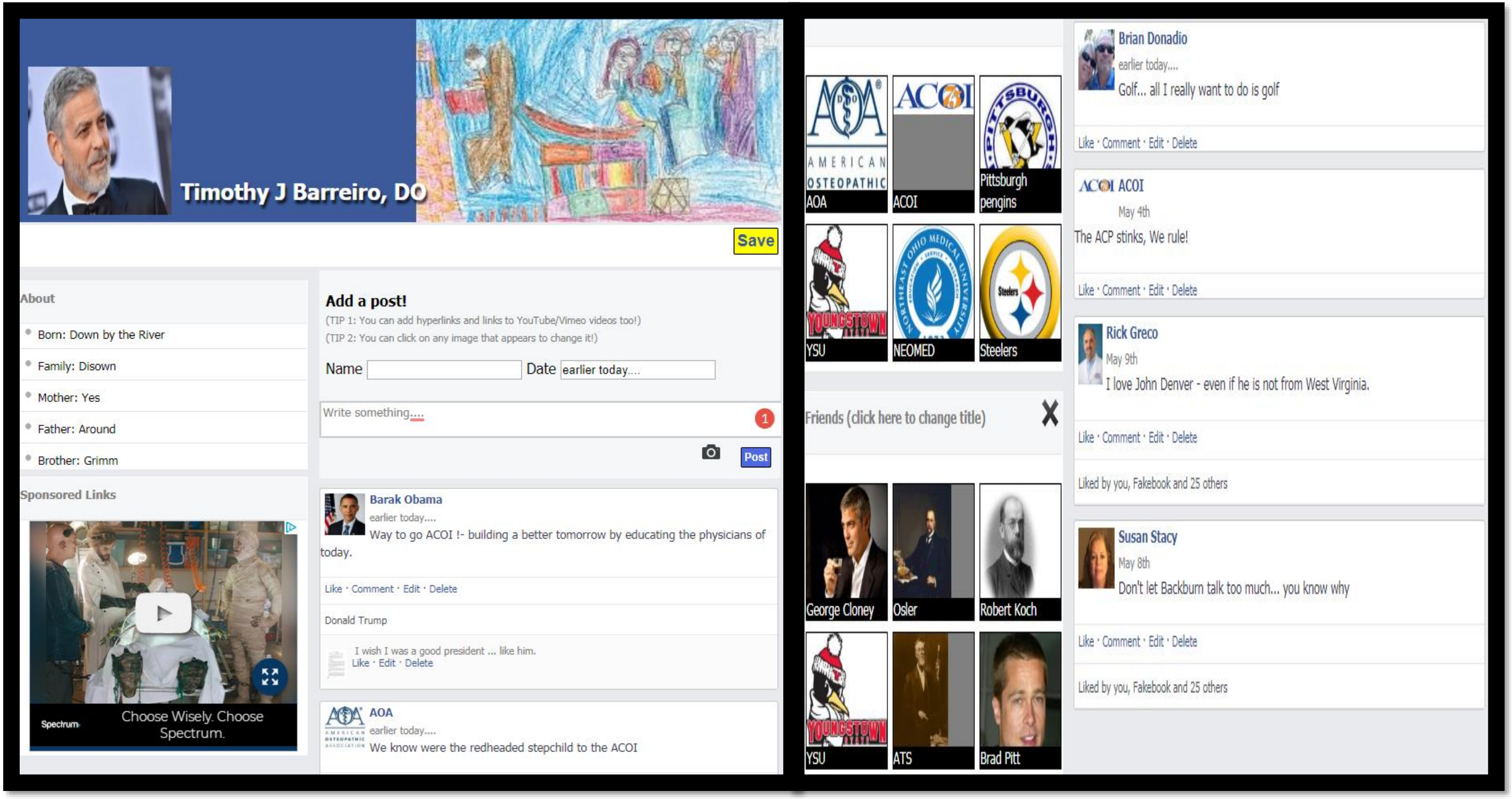


Management Changes



Burden M, Sarcone E, Keniston A, et al., Curbside vs Formal Consultation. *J. Hosp. Med* 2013;1;31-35. doi:10.1002/jhm

CONCLUSIONS: Presentations are always better than they seem!



Curbside Conclusions

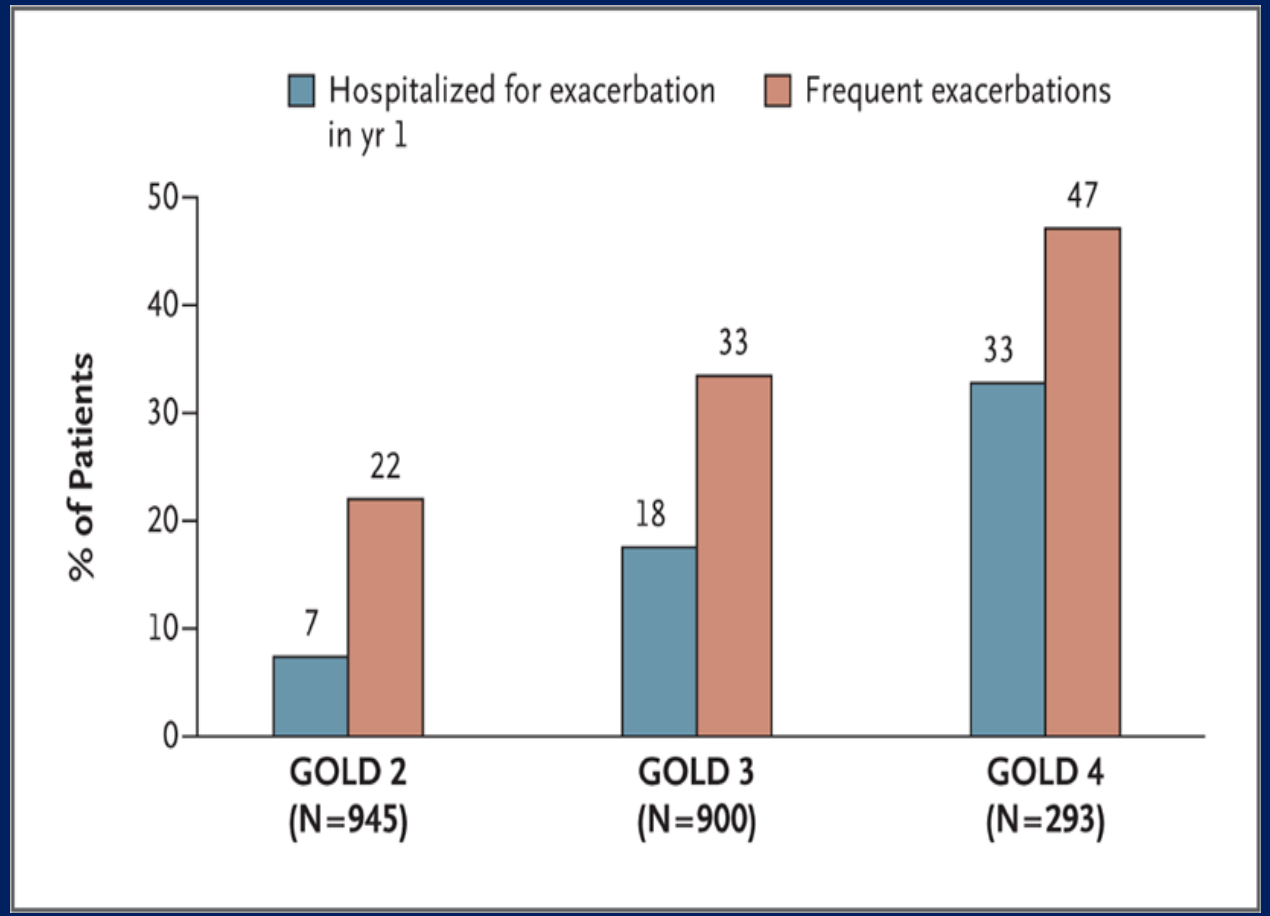
- We typical present the only what we know and the best scenario
- If you have to ask > 2 questions, please go see the patient
- If you can always get a handsome 35-year experienced pulmonary critical care attending to review your charts!

Hey Doc, Can I ask you something? How important are AECOPD

- **This study examined the rate of exacerbations among patients with COPD over a period of 3 years.**
- **The strongest predictor of an exacerbation in a given year was the presence of an exacerbation in the previous year**

Severity	FEV1 % Predicted
Mild - Stage I	> 80%
Moderate - Stage II	50 – 80%
Severe - Stage III	30 – 50%
Very Severe - Stage IV	< 30%

Classification of COPD severity and exacerbations



Hurst JR et al. Susceptibility to exacerbation in COPD. NEJM 2010; 363: 1128-1138.

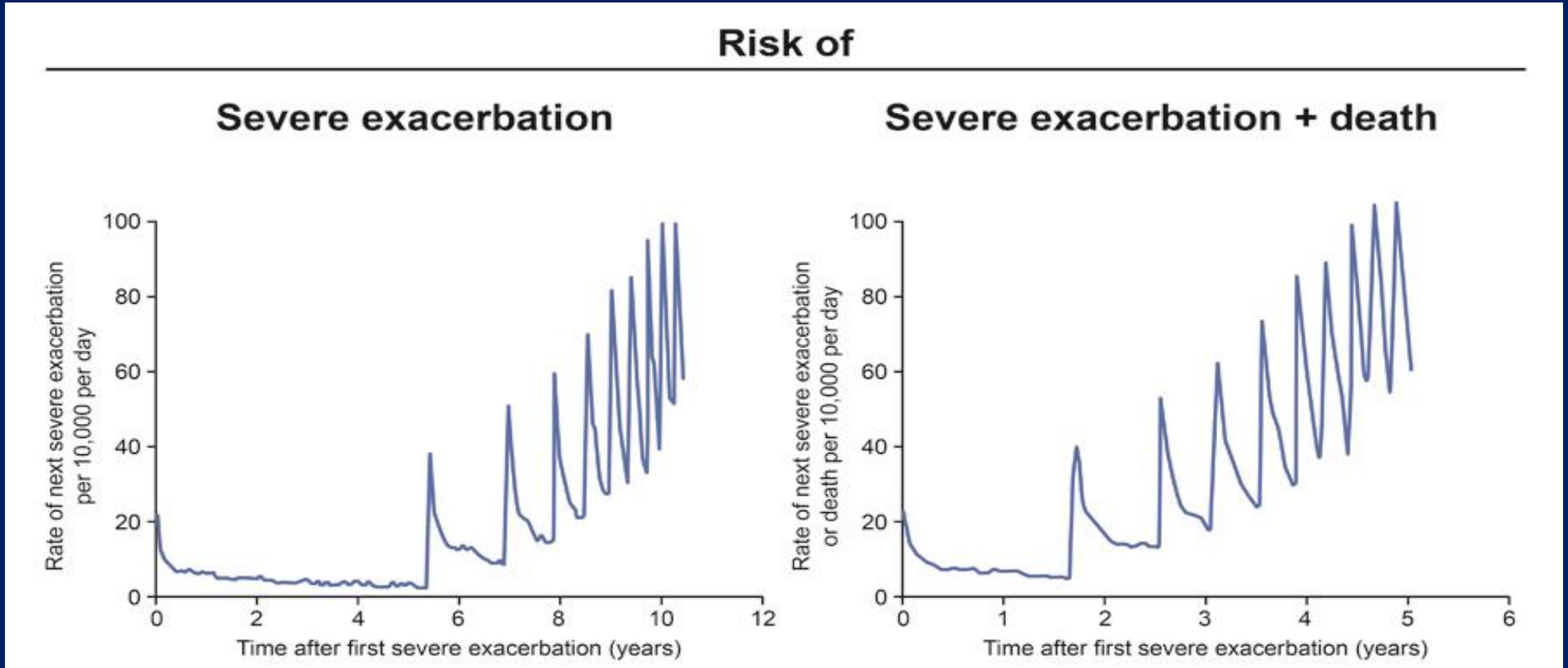
The Winnipeg Criteria

Type of Exacerbation	Criteria
Type I	All the 3 symptoms : 1. Increase in sputum volume 2. Increase in sputum purulence 3. Increase in shortness of breath
Type II	Any 2 of the above symptoms. 1. Increase in sputum volume 2. Increase in sputum purulence 3. Increase in shortness of breath
Type III	Any 1 of the above plus at least 1 of the following: Upper respiratory tract infection lasting ≥ 5 days, fever, increase in wheezes, increase in cough, and increase in heart rate 20%. 3 1. Increase in sputum volume 2. Increase in sputum purulence 3. Increase in shortness of breath

Approximately 6% of AECOPD patients require hospitalization
Mortality ranges from 3 – 10 %
If ICU is required, mortality rate approaches 30% in patients older than 65 years of age.

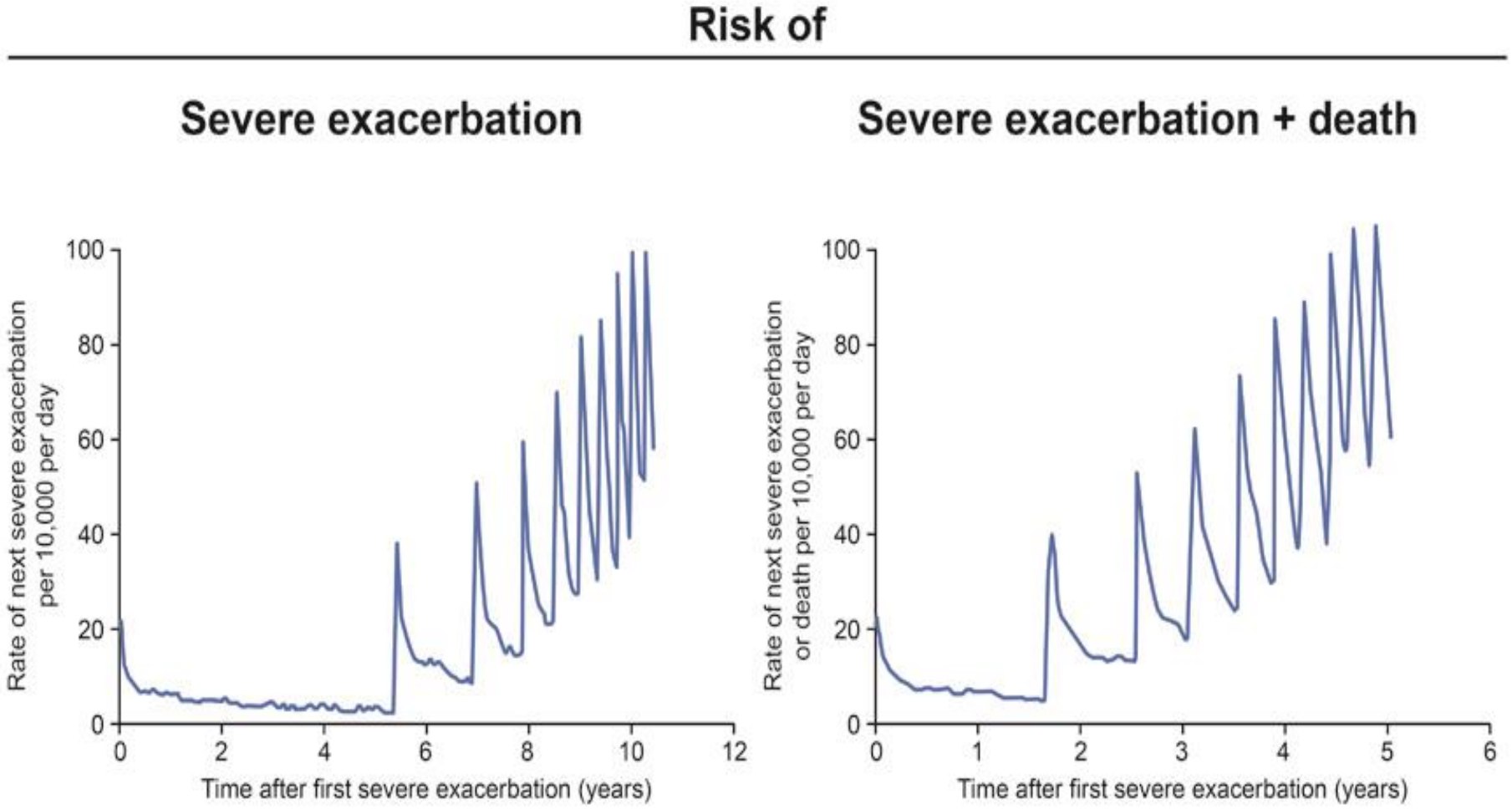
MacIntyre N, Huang YC. Acute exacerbations and respiratory failure in chronic obstructive pulmonary disease. *Proc Am Thorac Soc*. 2008;5(4):530–535. doi:10.1513/pats.200707-088ET

The Strongest Predictor of an Exacerbation and Death



Hazard function of successive hospitalized COPD exacerbations (per 10,000 per day) from the time of their first ever hospitalization for a COPD exacerbation over the follow-up period. For further explanations, see text. Reproduced from *Thorax* with permission from BMJ Publishing Group, Ltd.[58]

Soler-Cataluña JJ, Martínez-García MA, Román Sánchez P, Salcedo E, Navarro M, Ochando R. Severe acute exacerbations and mortality in patients with chronic obstructive pulmonary disease. *Thorax*. 2005;60(11):925–931. doi:10.1136/thx.2005.040527



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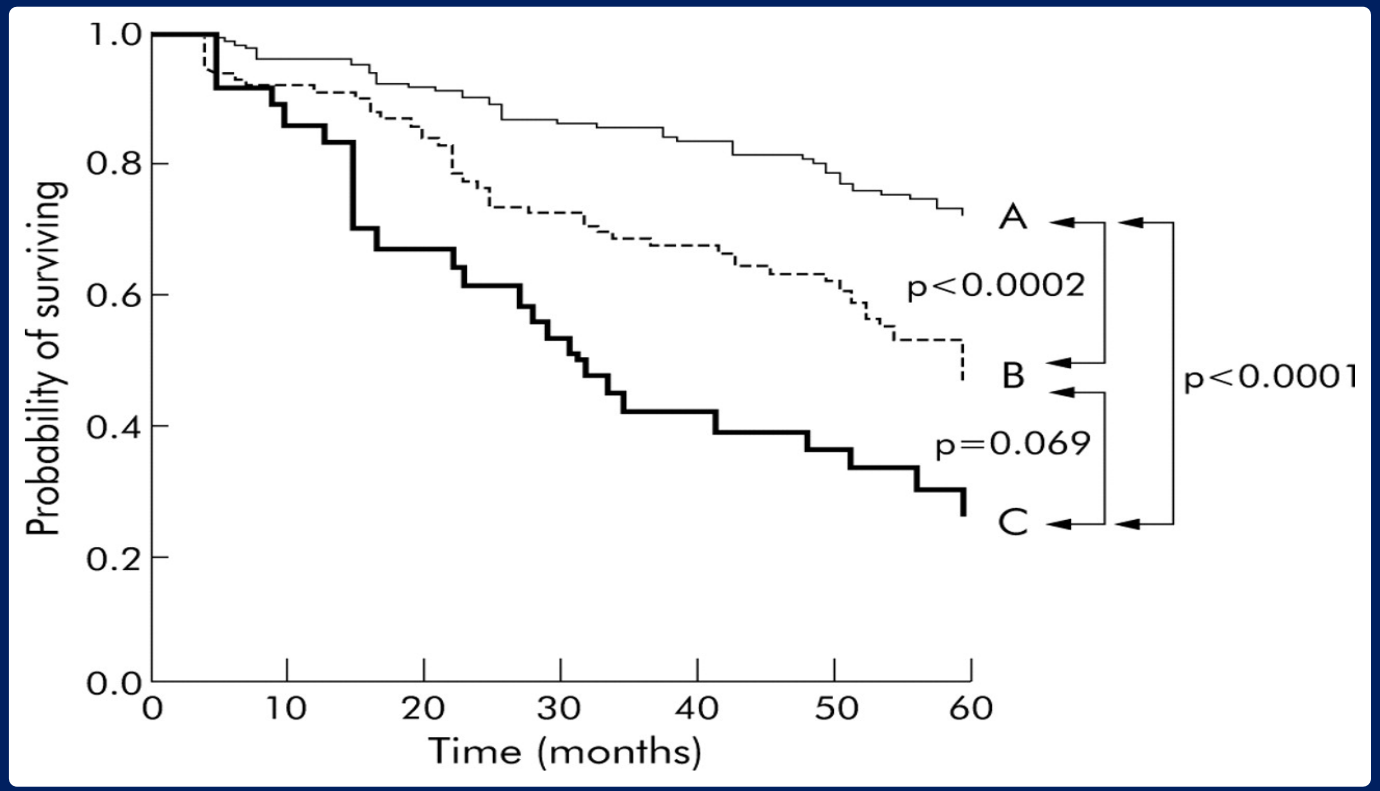
Worse Prognosis is Frequent Admissions

- ≥ 3 acute exacerbation requiring hospitalization is associated with a risk of death 4.30 times greater amongst those patient not requiring hospitalization.



Kaplan-Meier survival curves by frequency of exacerbations in patients with COPD:
Group A, patients with no acute exacerbations of COPD
Group B, patients with 1–2 acute exacerbations of COPD requiring hospital management
Group C, patients with ⩾3 acute exacerbations of COPD

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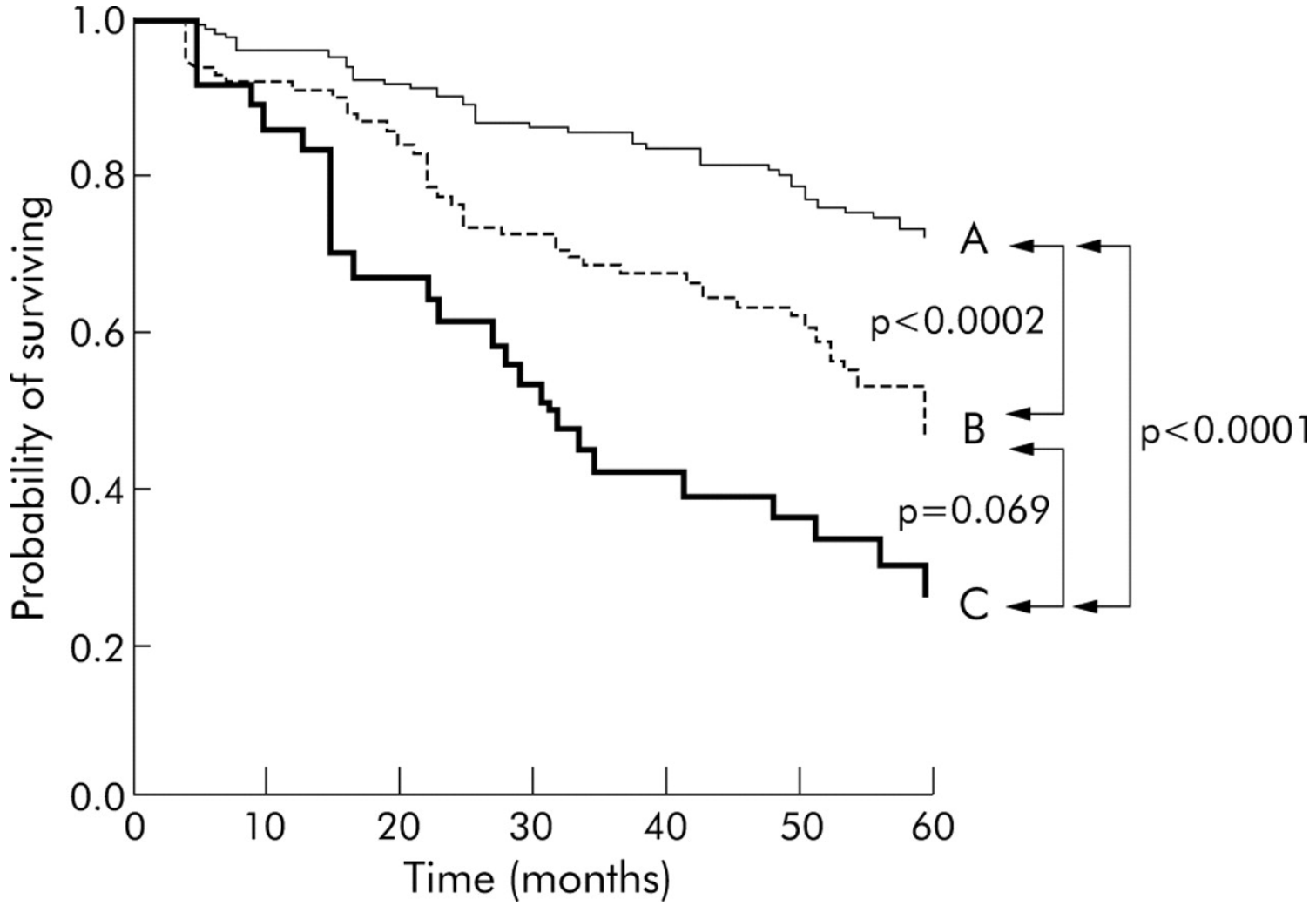
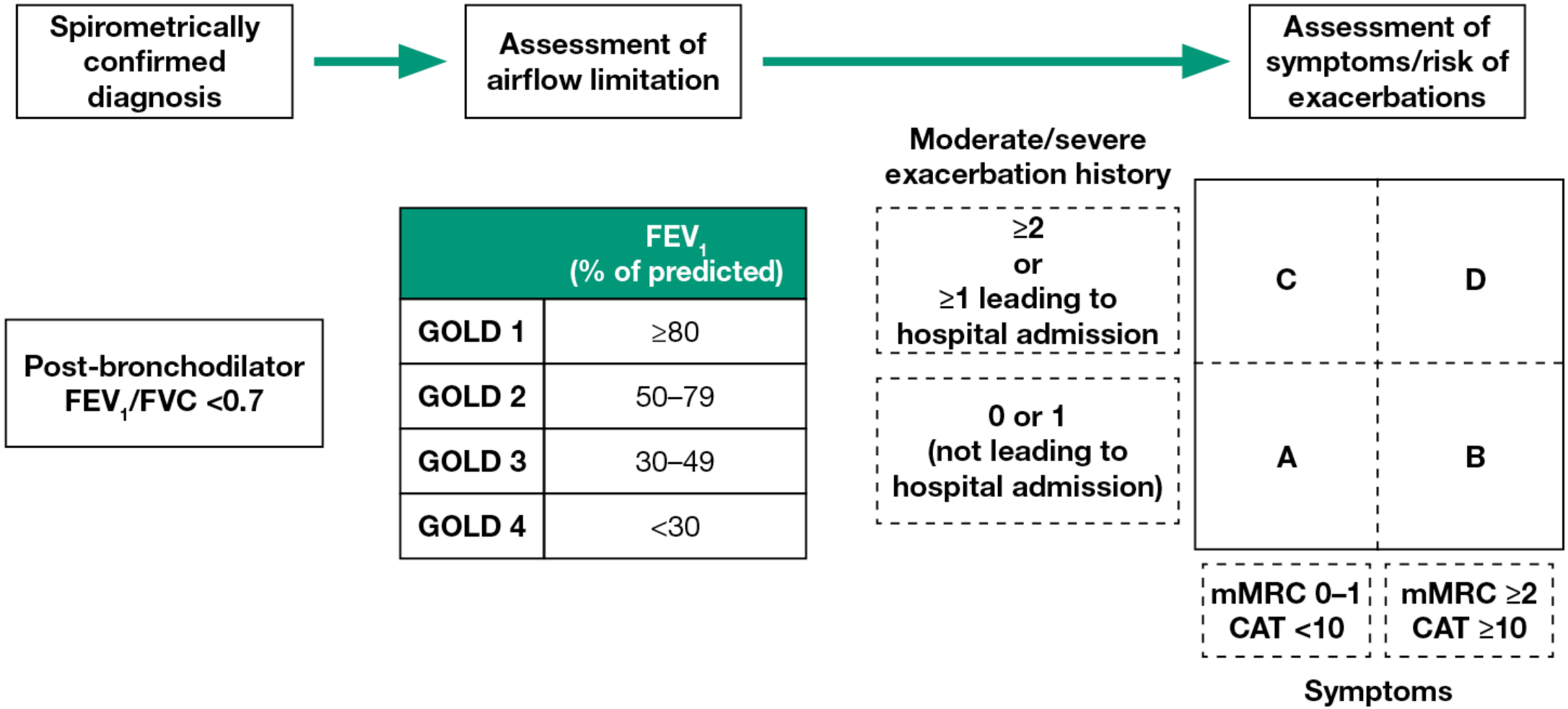


J J Soler-Cataluña et al. Thorax 2005;60:925-931

AECOPD Risk Factors

- The majority of patients with AECOPD are < 65 years old and are ♀
- Patients with COPD have their first exacerbation associated with FEV_1 that is between 40% and 60% of predicted
- The higher the severity of GOLD stage
    - stages 2 < 3 <4, the more likely hospitalization
- Previous exacerbations
    - > 2 exacerbation = 6 x the risk of another exacerbation/hospitalization
- Active smoking
- Others: patient with COPD & …GERD, osteoporosis, depression, absence of timely vaccinations, and lack of daily exercise

Akinbami LJ, Liu X., Chronic obstructive pulmonary disease among adults aged 18 and over in the United States, 1998 – 2009. NCHS Data Brief. 2011 (63): 1 – 8.
GOLD Guidelines, 2017.



FEV_1=forced expiratory volume in the first second; FVC=forced vital capacity; mMRC=modified Medical Research Council; CAT=COPD assessment test.

Beniamino Guerra, Violeta Gaveikaite, Camilla Bianchi, Milo A. Puhan
European Respiratory Review 2017 26: 160061; **DOI:** 10.1183/16000617.0061-2016

AECOP
Treatment options

- Supplemental oxygen, goal oxygen saturations 88% - 92%
- Bronchodilators
  - Aerosolized = reduced flow rates
- Systemic corticosteroids, dose is unclear, duration no > 14 days.
  - Prednisone 0.5 to 1 mg/kg per day for 5 to 14 days,
  - Inhaled corticosteroids do not offer a significant benefit in AECOPD in the hospital
- Antibiotics – reduce the duration, and treatment failures
- Management of respiratory failure
  - Noninvasive mechanical ventilation (pH <7.35)
  - Invasive mechanical ventilation

*Hoogendoorn M, Feenstra TL, Boland M, et al. Prediction models for exacerbations in different COPD patient populations: comparing results of five large data sources. Int J Chron Obstruct Pulmon Dis. 2017;12:3183–3194. doi:10.2147/COPD.S142378.
**Mayo Clinic Proceedings 2018 93, 1488-1502DOI: (10.1016/j.mayocp.2018.05.026.

AECOPD Background

- Acute exacerbations can have both infectious and non-infectious etiologies:
  - Infection
    - bacteria (29.7%)
    - viral (23.4%)
    - both (25.0%)
  - Non-infection (21.8%)
    - aspiration
    - air pollution
    - allergies
    - pulmonary embolism
    - poor adherence and technique with inhalers

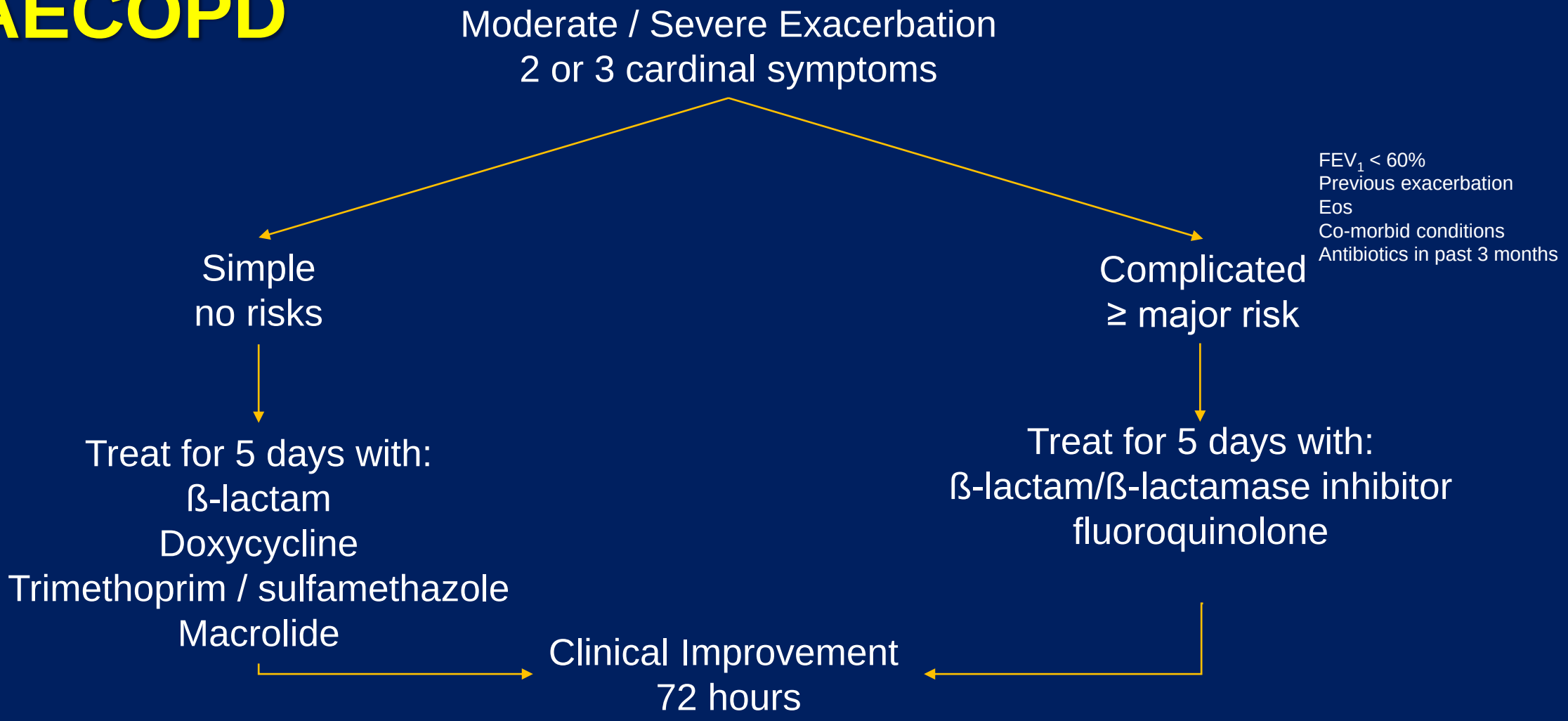
Zhang HL, Tan M, Qiu AM, Tao Z, Wang CH. Antibiotics for treatment of acute exacerbation of chronic obstructive pulmonary disease: a network meta-analysis. BMC Pulm Med. 2017;17(1):196. doi:10.1186/s12890-017-0541-0.
Papi A, Bellettato CM et al. Infections and airway inflammation in chronic obstructive pulmonary disease severe exacerbations. Am J Respir Crit Care Med. 2006; 173 (10):1114 – 1121.

Hey Doc, Can I ask you something: What about the use of antibiotics in AECOPD

- Using clinical indicators
  - dyspnea, sputum purulence, sputum volume
  - severity of illness (advanced airflow limitation, presence of comorbidities, need for mechanical ventilation)
  - laboratory data (sputum culture, CRP, procalcitonin) alone should not be used to guide initiation of antibiotics
- When antibiotic treatment is indicated, choice of drug is dependent on distinguishing a simple case from a complicated case of AECOPD.
- A five-day course of oral antibiotics is recommended for the treatment of AECOPD.

El-Moussaoui, Roede BM, Speelman P et al. Short-course antibiotic treatment in acute exacerbations of chronic bronchitis and COPD: a meta-analysis of double-blind studies. Thorax 2008; 63: 414 – 422.
K. C. Chang, C. C. Leung. Meta-analysis may not be practicable for guiding antibiotic therapy European Respiratory Journal Apr 2008, 31 (4) 906-907; **DOI:** 10.1183/09031936.00156707.

Approach to antibiotic administration in AECOPD



Rothberg MB, Pekow PS, Lahti M, Brody O, Skiest DJ, Lindenauer PK. Antibiotic Therapy and Treatment Failure in Patients Hospitalized for Acute Exacerbations of Chronic Obstructive Pulmonary Disease. *JAMA*.2010;303(20):2035–2042. doi:10.1001/jama.2010.672

Indications for Non invasive ventilation

- **Indications for NIV – at least one of the following**
  - Respiratory acidosis (pH<7.35 &/or $PaCO_2$)
  - Severe dyspnea with clinical signs s/o respiratory muscle fatigue, increased WOB or both
  - Use of respiratory accessory muscles
  - Paradoxical motion of abdomen
  - Intercostal retraction
- **In mild AECOPD (pH >7.35), NIV poorly tolerated and no more effective that standard therapy**
- **NIV trial is reasonable at *any** pH ≤ 7.35**

Cochrane Database Syst Rev 2017; 7: CD004104
Ann Intern Med 2003; 138: 861-70.
Eur Respir J 2017; 50: 1602426.

Noninvasive ventilation in Acute Respiratory Failure

Outcome	#of Studies	# of patients	Risk Ratio (95% CI)	NNT (95% CI)
Mortality	12	n = 854	0.54 (0.38,0.76)	12 (9,23)
Intubation	17	n = 1105	0.36 (0.28,0.46)	5 (5,6)
Hospital LOS	10	n = 888	Mean Difference (95% CI) -3.39 days (-5.93, -0.85)	

Official ERS/ATS clinical practice guidelines: noninvasive ventilation for acute respiratory failure. European Respiratory Journal Aug 2017, 50 (2) 1602426; DOI: 10.1183/13993003.02426-2016.

Hey Doc, Can I ask you a question: Which mode is best in my patient with AECOPD

AVAPS

Min P and max P

EPAP - oxygenation

Auto PS - auto adjusts

S/T mode

IPAP - ventilation

EPAP - oxygenation

Fixed PS - IPAP minus EPAP


PHILIPS
Informational Message
Spont
Rate
16
VT
550
8.8
PIP
20
Pt. Leak
12
Pt. Trig
95
TI/TTOT
38
P
V
Active Mode: S/T
IPAP
14
Rate
18
I-Time
1.00
Rise
3
OFF
EPAP
4
O2
21
Standby
S/T Settings
Alarm Settings
Modes
Menu
RESPIRONICS
V60


PHILIPS
IPAP
14
EPAP
4
RESPIRONICS
V60
IPAP
Ventilation

IPAP – EPAP=
pressure support

Average Volume-Assured Pressure Support


PHILIPS
Alarm Silence
Alarm Reset
Informational Message
Spont
Rate
16
VT
502
VE
8.8
PiP
17
Pt. Leak
12
Pt. Trig
95
TI/TTOT
38
P
V
100% O2
Active Mode: AVAPS
VT
500
Rate
4
I-Time
1.00
Rise
3
EPAP
4
Min P
10
Max P
20
O2
21
AVAPS Settings
Alarm Settings
Modes
Menu
Standby
RESPIRONICS
V60

AVAPS

Min P and max P

EPAP - oxygenation

Auto PS - auto adjusts

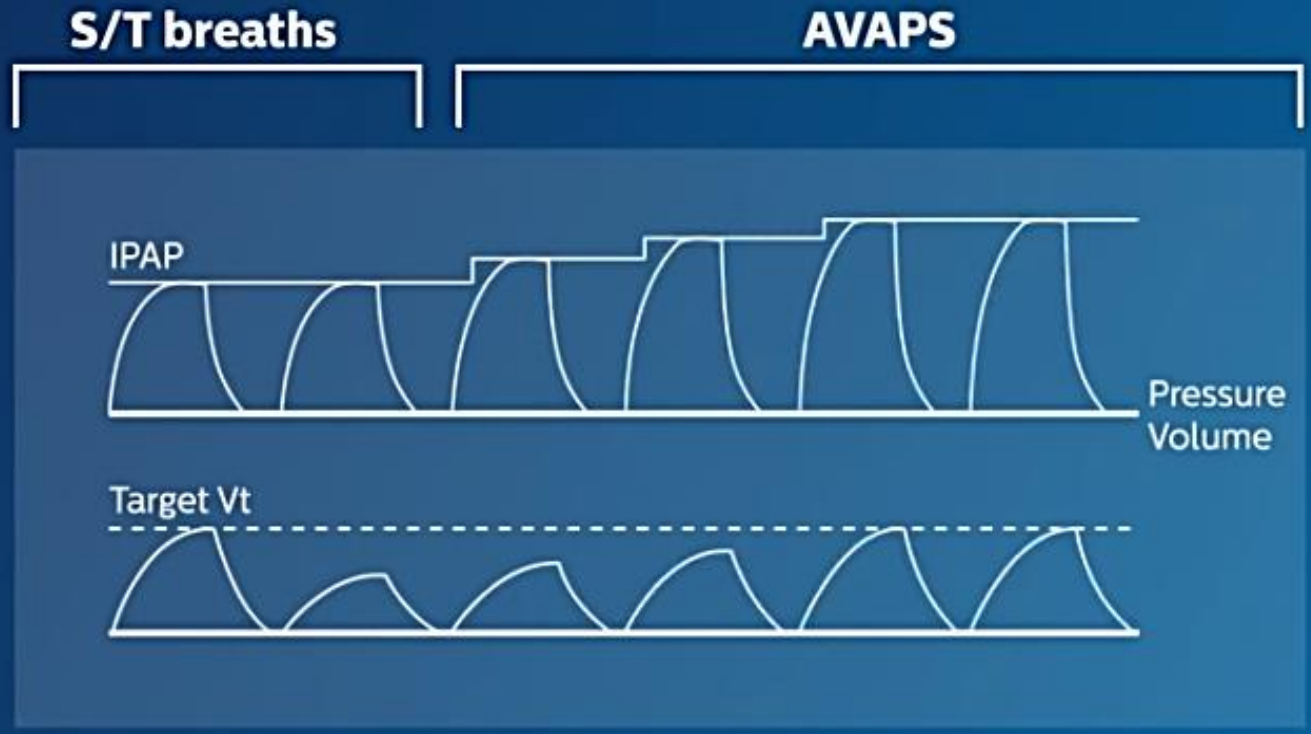
Assured average volume

S/T mode

IPAP - ventilation

EPAP - oxygenation

Fixed PS - IPAP minus EPAP


S/T breaths
AVAPS
IPAP
Pressure
Volume
Target Vt

Important

AVAPS should not be used when rapid IPAP adjustments are needed to achieve the desired tidal volume

You should not expect to see a change of more than 2.5 cmH_2O within one minute

Candidates

Neuromuscular Disorder

Restrictive Thoracic Disorder

Obesity Hypoventilation Syndrome (OHS)

AVAPS can assist to assure an average tidal volume

Hey Doc, Can I ask you a question: Key Conclusions

- Be careful of curbside consults, if > than two question needed during the discussion as for a formal evaluation
- Acute exacerbations of COPD are important and deadly
- With each exacerbation, mortality risks increase
- The key symptoms remain basic (Winnipeg criteria)
- The use of antibiotics in an acute exacerbation of COPD remains reasonable in most cases