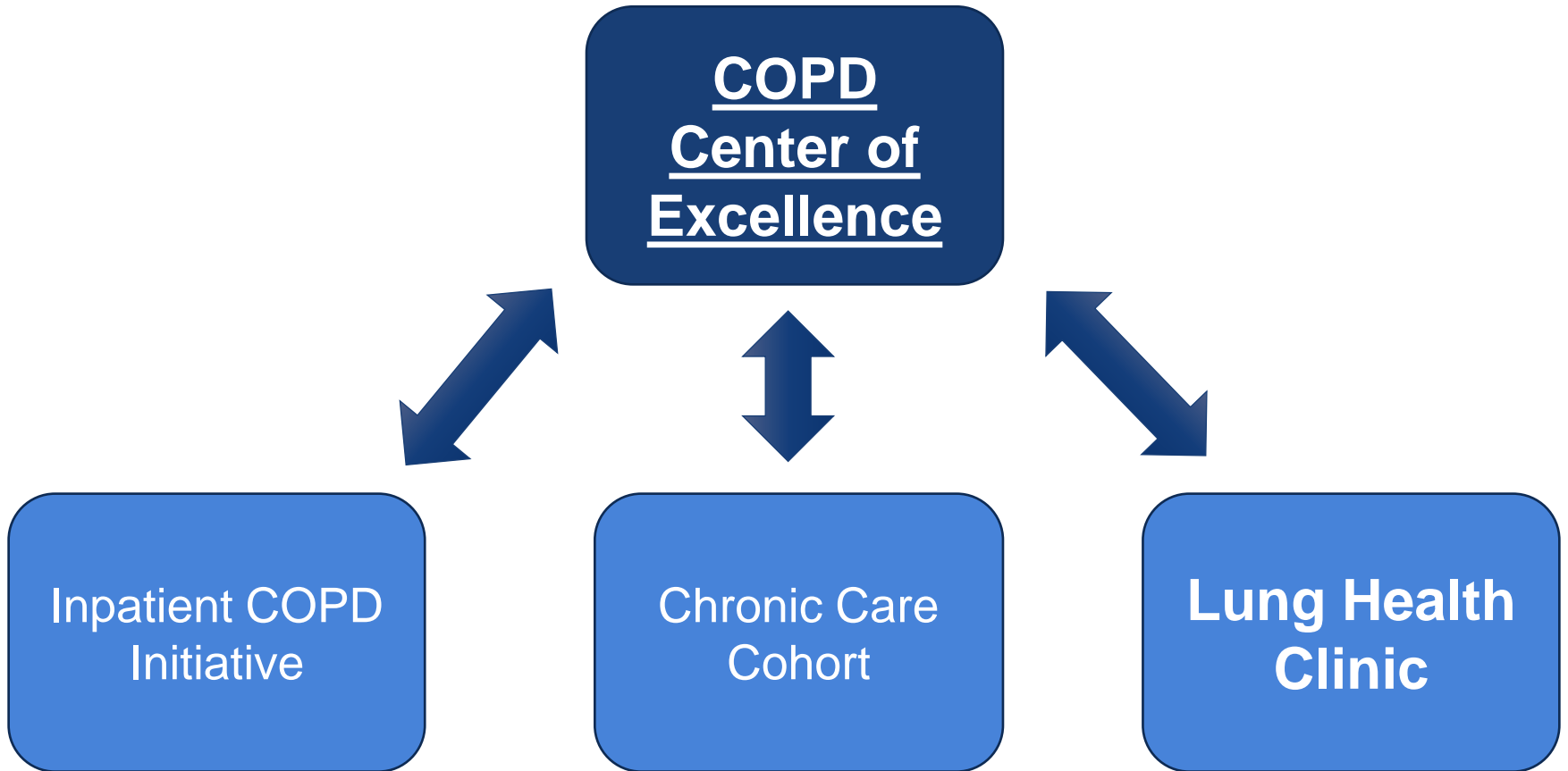


Can the Low Dose CT Scan Be Used as a Window to Early Lung Disease

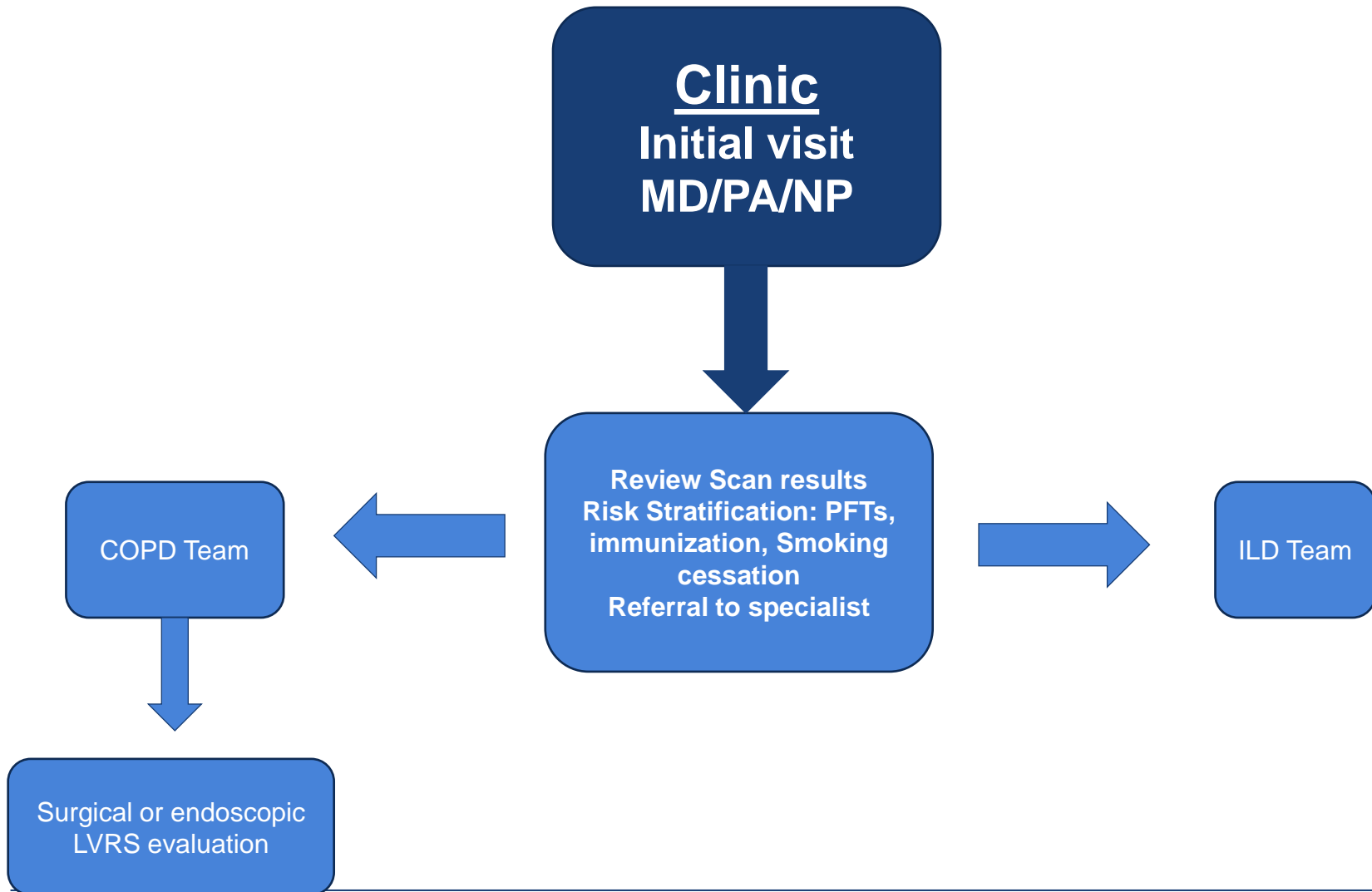
Lee Gazourian, MD

Beth Israel Lahey Health 
Lahey Hospital & Medical Center

COPD Center of Excellence



Lung Health Clinic



CTLS Cohort

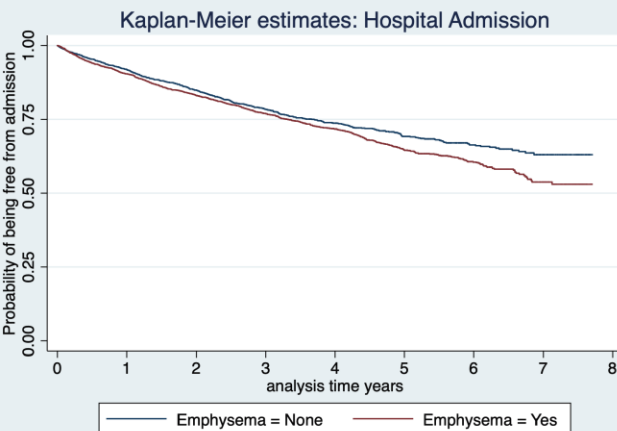
	LHMC	MAH
	(N=4,675)	(N=915)
Age	62.4 ± 6.2	64.4 ± 6.5
Gender:		
Male Sex	2545 (54.4%)	498 (54.4)
Race:		
White Race	4407 (94.3%)	837 (91.5%)
Other	268 (5.7%)	78 (8.5%)
BMI	29.2 ± 6.0	28.5 ± 6.0
Smoking:		
Current	2364 (50.6%)	471 (51.5%)
Pack Years	48.6 ± 21.8	43.4 ± 17.4
Years Quit	10.0 ± 8.4	10.2 ± 9.8
Years Follow Up	3.93 ± 2.14	2.60 ± 1.01
Screening Group:		
NCCN Group 1	3658 (78.3%)	773 (84.5%)
Emphysema		
Emphysema (yes)	2666 (57.0%)	475 (51.9%)
Mild	1839 (39.3%)	-
Moderate	595 (12.7%)	-
Marked	178 (3.8%)	-
Not Scored	54 (1.2%)	915 (100%)

Hospital Admission

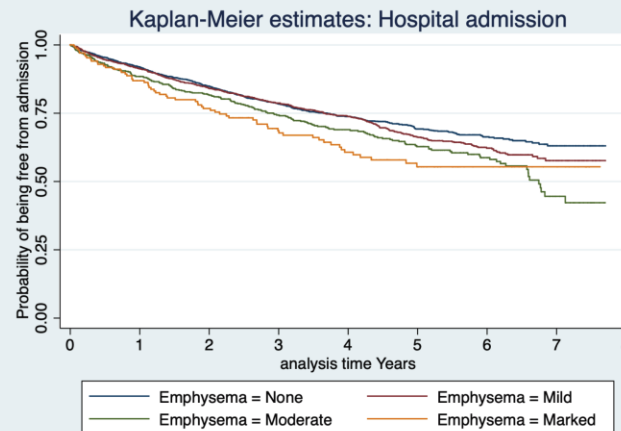
	LHMC N 1248 (26.6%)		MAH N 191 (20.9%)	
	HR (95% CI)	P Value	HR (95% CI)	P Value
Emphysema (Yes)	1.18 (1.05-1.32)	0.004*	1.34 (1.00-1.79)	0.047
None	Reference Group	-		
Mild	1.09 (0.96-1.24)	0.164	ND	
Moderate	1.34 (1.13-1.58)	0.001*	ND	
Severe	1.52 (1.17-1.98)	0.002*	ND	

Hospital Admission, Emphysema

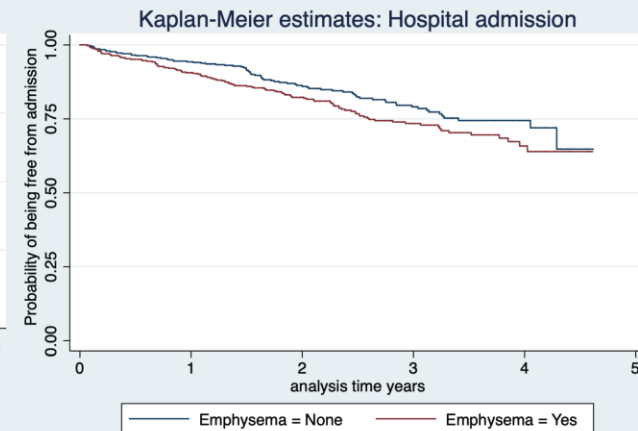
A) LHMC



B) LHMC



C) MAH Cohort

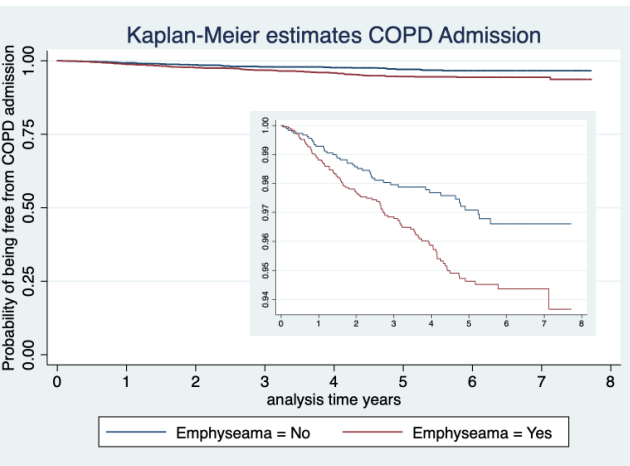


COPD Admission

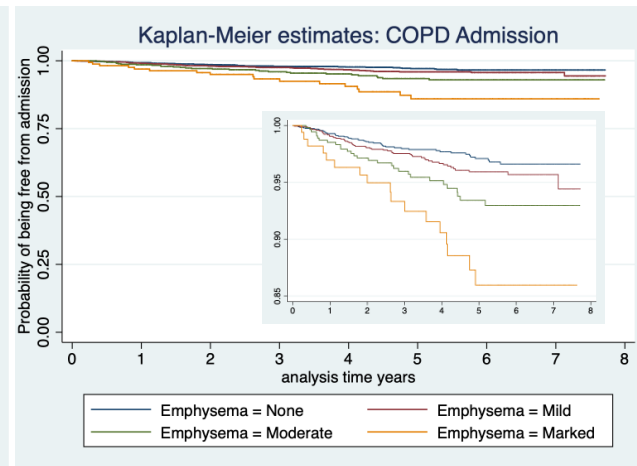
	LHMC N 150 (3.2%)		MAH N 48 (5.2%)	
	HR (95% CI)	P Value	HR (95% CI)	P Value
Qualitative Emphysema:				
None	Reference			
Mild	1.36 (0.92-2.01)	0.125	ND	
Moderate	2.17 (1.36-3.46)	0.001*	ND	
Marked	4.25 (2.43-7.42)	<0.001*	ND	

COPD Admission

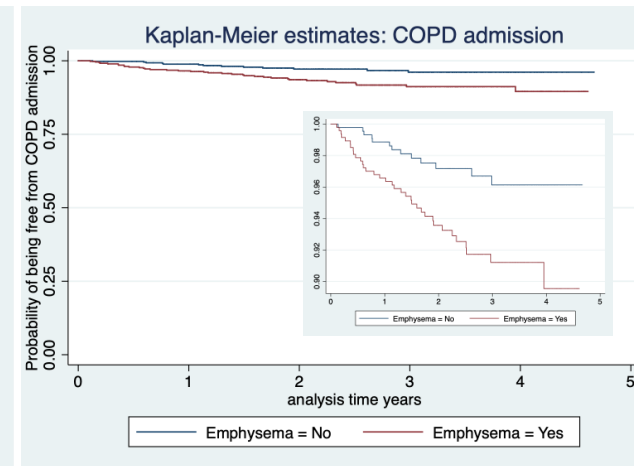
A) LHMC



B) LHMC

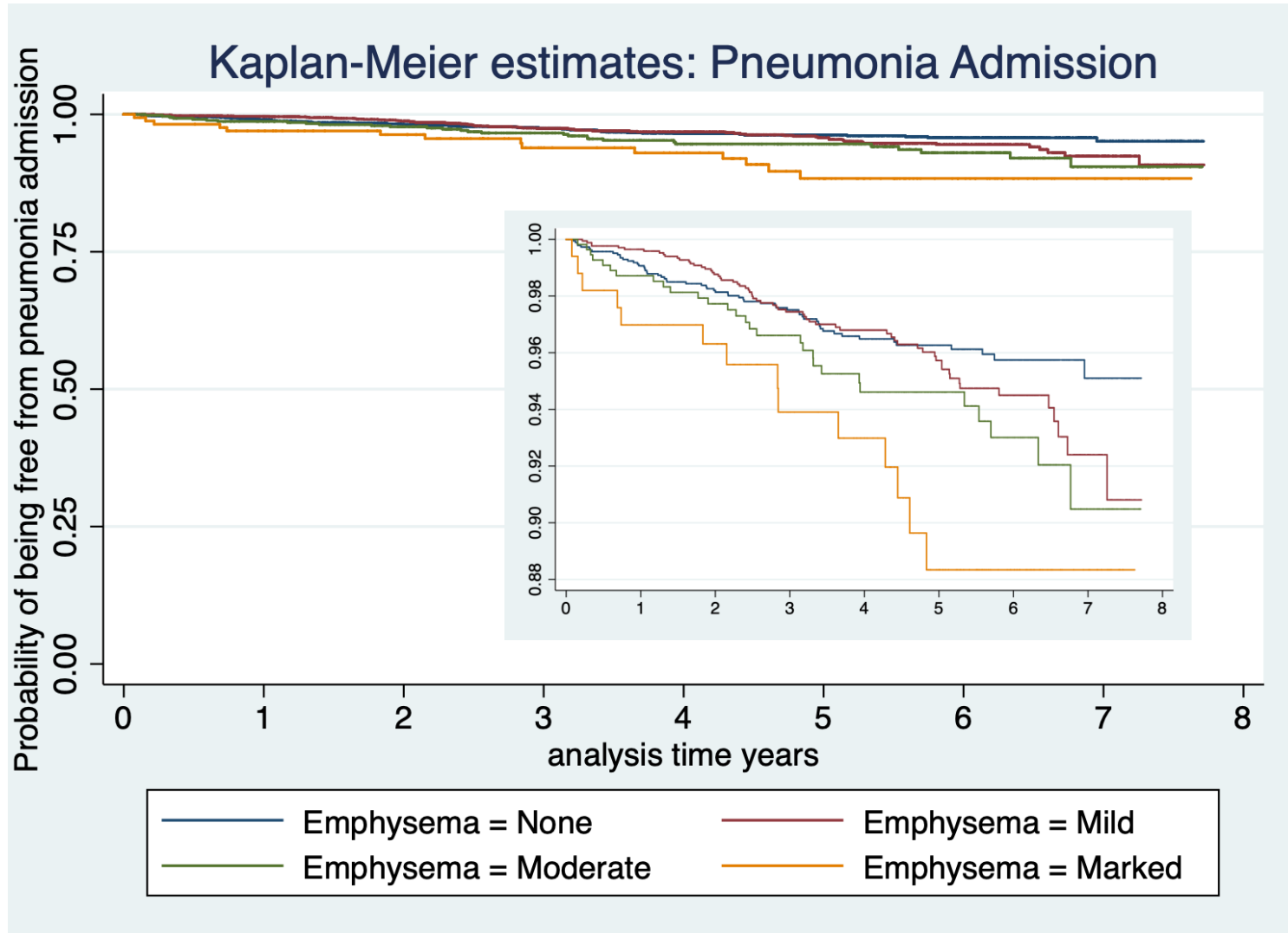


C) MAH Cohort



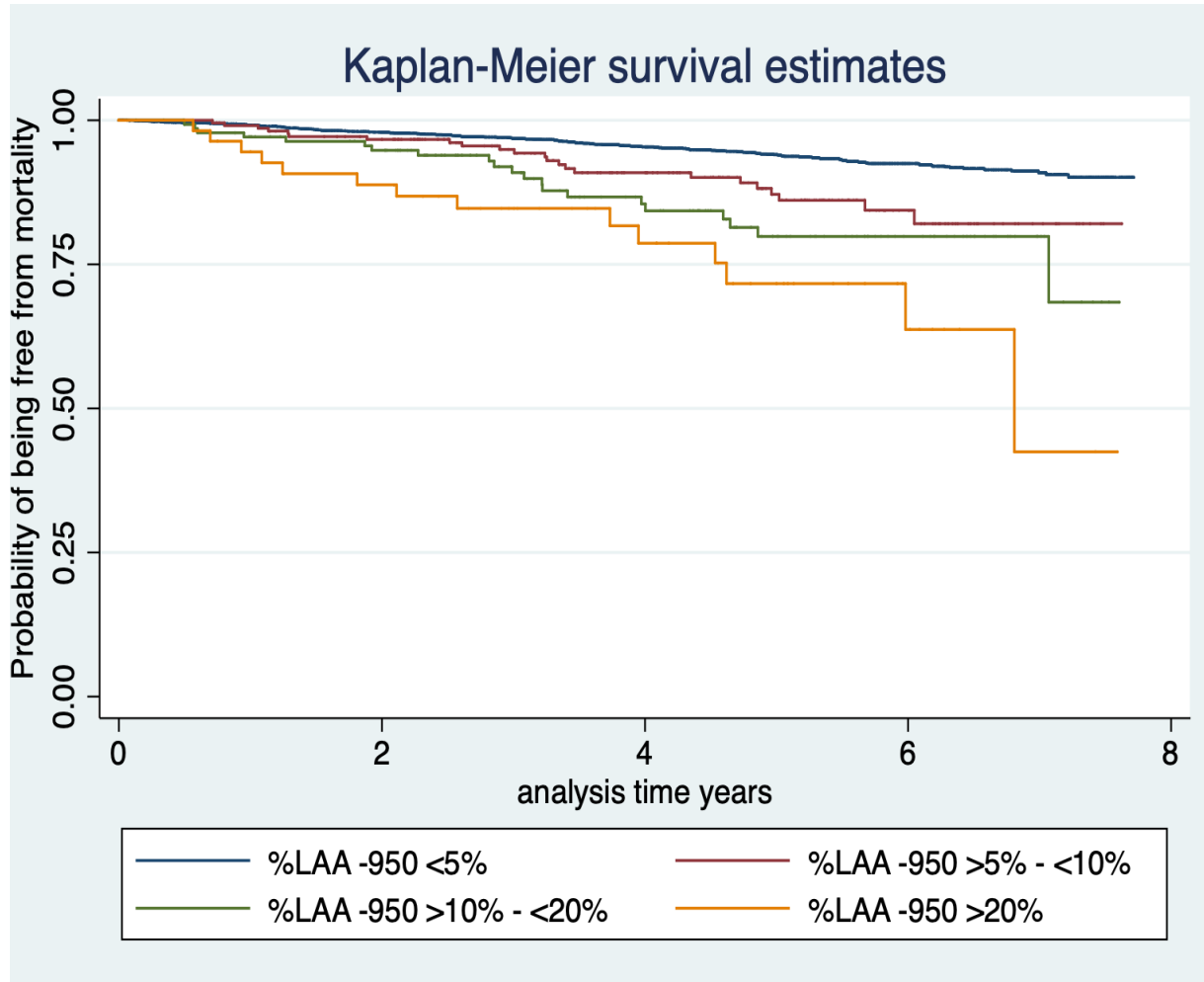
PNA Admission

	LHMC N 169 (3.6%)		MAH N 37 (4.0%)	
	HR (95% CI)	P Value	HR (95% CI)	P Value
Qualitative Emphysema:	1.40 (1.02-1.92)	0.036	1.67 (0.85-3.28)	0.137
None	Reference			
Mild	1.21 (0.85-1.72)	0.286	ND	
Moderate	1.64 (1.05-2.55)	0.030	ND	
Severe	2.67 (1.49-4.78)	0.001*	ND	



Mortality: 274 (5.9%)

	LHMC N 4495	
%LAA <1%	Reference Group	-
%LAA ≥1%<-<5%	1.08 (0.81-1.46)	0.591
%LAA ≥5%<-<10%	1.78 (1.14-2.80)	0.012
%LAA ≥10%<-<20%	2.77 (1.73-4.42)	<0.001
%LAA >20%	5.07 (2.91-8.83)	<0.001



Clinical Variables: CTLS Cohort

In Network PCP	LHMC N 3226 (68.7%)	MAH N 915 (100%)
Emphysema (Yes)	1045 (56.8%)	261 (54.9%)
Active Smoking	1045 (56.8%)	261 (54.9%)
PFTs (No)	1,238 (67.3%)	371 (78.1%)
PPSV 23 (No)	713 (38.8%)	254 (53.5%)

Endoscopic LVR Screening

N 4495	Any Lobe	RUL	RML	RLL	LUL	LLL
≥25% LAA	130 (2.89%)	100 (2.22%)	32 (0.71%)	24 (0.53%)	49 (1.09%)	16 (0.36%)

Quantification of emphysema on chest CT

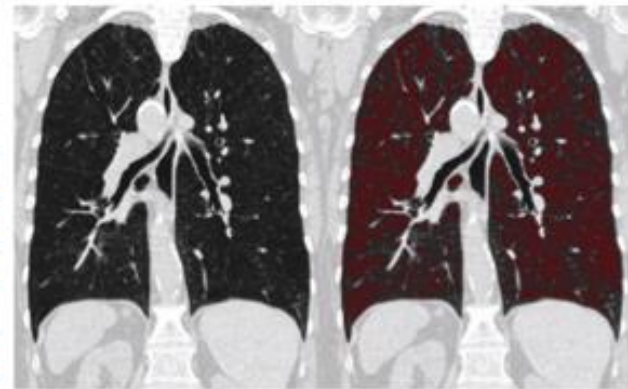
 **Lahey Health**
Rescue Lung Rescue Life
Emphysema Report

Subject: *Joe Smith*

Global Level of Emphysema: **41.83%**

Emphysema per region:

Region	Emphysema (%)
Whole Lung	41.83
Right Lung	40.78
Left Lung	43.01
LUT	41.96
LMT	54.76
LLT	31.75
RUT	37.76
RMT	44.19
RLT	40.22



Lung Health Clinic

PNA

COPD

ILD

MI/CHF

Lung Health
Clinic

PAH

Bronchiectasis

Metabolic
syndrome

Fractures