

Differences in COPD Exacerbations and Admissions Before and During the COVID-19 Pandemic

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Background

- Chronic Obstructive Pulmonary Disease (COPD) is a progressive, incompletely reversible airflow obstruction with systemic inflammation.
- Patients experience 1 to 3 acute exacerbations a year
- As COPD is a progressive illness and hospital costs continue to rise, the health care associated costs for acute exacerbations is expected to continue to increase
- On March 11, 2020 COVID-19 was declared a global pandemic. As of July 2020, there were over 3 million cases in the United States.
- Daily admission rates decreased in the United States during the pandemic for acute medical conditions

Purpose

- To determine the effects of the COVID-19 pandemic on COPD exacerbations and hospital admissions

Methods

Study Design: Epidemiological study to determine the effects of the COVID-19 pandemic on the number of COPD exacerbations and admissions

Participants: Patients with a known diagnosis of COPD as of 3/1/2019 through 2/28/2021.

Setting: Community health system comprised of 3 acute care hospitals.

Outcomes: Primary outcomes will be percentage of patients with known diagnosis of COPD that were diagnosed with COPD exacerbation pre/during COVID and number of COPD exacerbations that required hospitalization

Data collection: Epic EMR

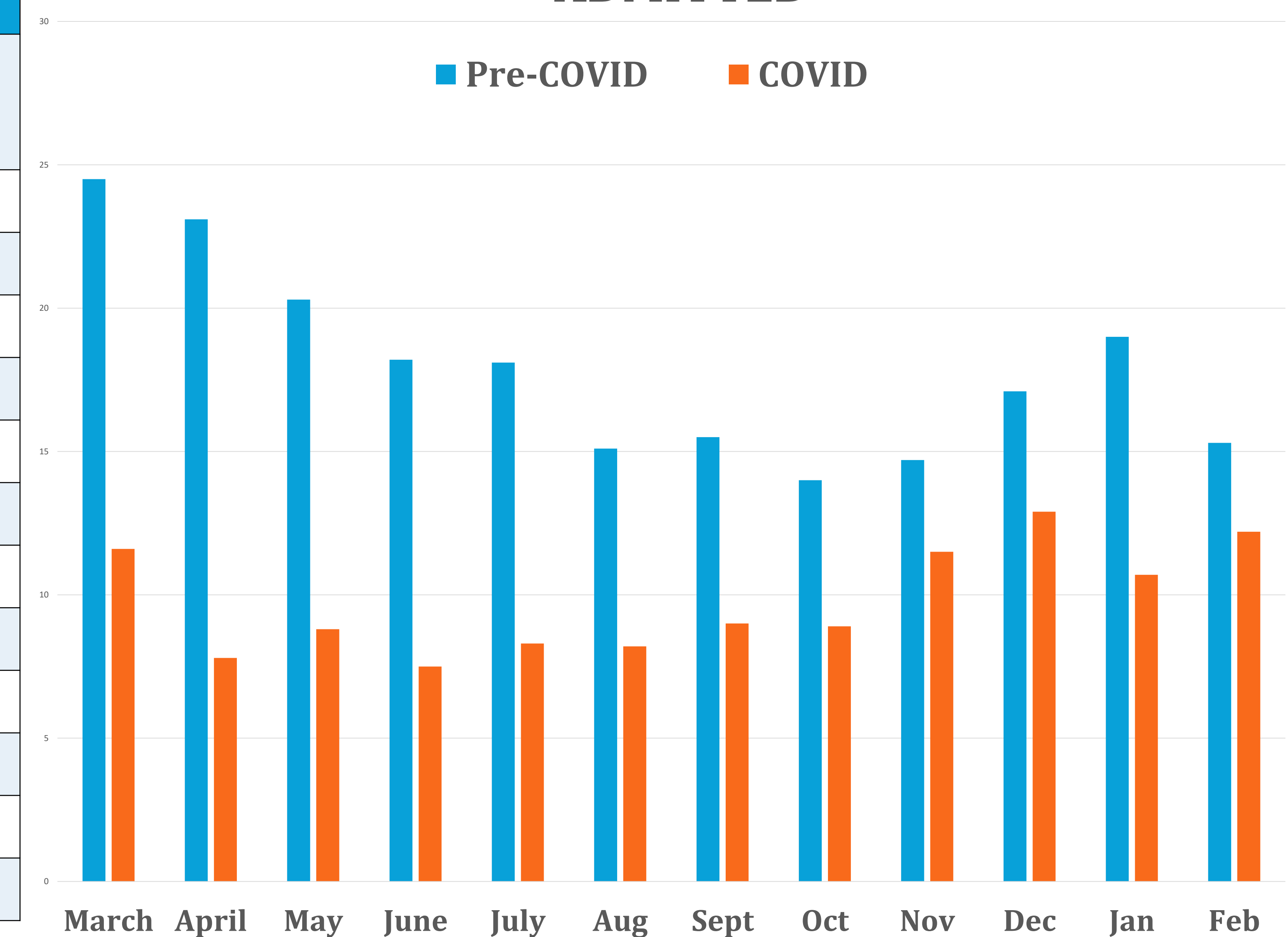
Statistical Analysis: Proportions compared using chi-square. STATA 13.1 was used for analysis

Results

- In March 2019 there were total of 6,421 patients with a known diagnosis of COPD. By February 2021, this rose to 10,418 patients.

Month	% Exacerbation			% of Exacerbations Admitted		
	Pre-COVID	COVID	p-value	Pre-COVID	COVID	p-value
March	8.3	8.9	0.23	24.5	11.6	< 0.001
April	8.4	8.5	0.86	23.1	7.8	< 0.001
May	8.1	8.3	0.69	20.3	8.8	< 0.001
June	8.1	8.1	0.95	18.2	7.5	< 0.001
July	8.2	7.9	0.59	18.1	8.3	< 0.001
August	7.8	7.8	0.92	15.1	8.2	< 0.001
September	8.1	8.0	0.85	15.5	9.0	< 0.001
October	8.6	7.8	0.07	14.0	8.9	0.003
November	8.3	7.8	0.22	14.7	11.5	0.08
December	9.0	8.0	0.02	17.1	12.9	0.03
January	9.4	7.8	< 0.001	19.0	10.7	< 0.001
February	9.3	7.8	< 0.001	15.3	12.2	0.08

PERCENT OF COPD EXACERBATIONS ADMITTED



Conclusions

- The percentage of COPD patients with an exacerbation was relatively unchanged in most months pre and during COVID.
- However, the proportion of patients admitted of those with COPD exacerbations was markedly reduced in most months.
- Future research is needed to determine reason for increase in diagnosis of COPD and reasons for decrease in hospital admissions for COPD exacerbations post-COVID.