

# Respiratory-related hospitalization and mechanical ventilation in patients with idiopathic pulmonary fibrosis: data from the IPF-PRO Registry

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## INTRODUCTION

- Hospitalizations are common among patients with idiopathic pulmonary fibrosis (IPF) and are associated with high mortality.<sup>1-3</sup>

## AIM

- To assess the frequency and impact of respiratory-related hospitalization and mechanical ventilation in patients with IPF.

## METHODS

### The IPF-PRO Registry<sup>4</sup>

- The IPF-PRO Registry enrolled patients with IPF that was diagnosed or confirmed at the enrolling center in the previous 6 months at 46 US sites between June 2014 and October 2018.
- At enrollment, retrospective data were collected from patients' medical records. Patients were then followed prospectively, with follow-up data collected approximately every 6 months until death, lung transplant, or withdrawal from the registry.
- Hospitalizations were categorized by the investigator as having or not having a respiratory cause.

### Analyses

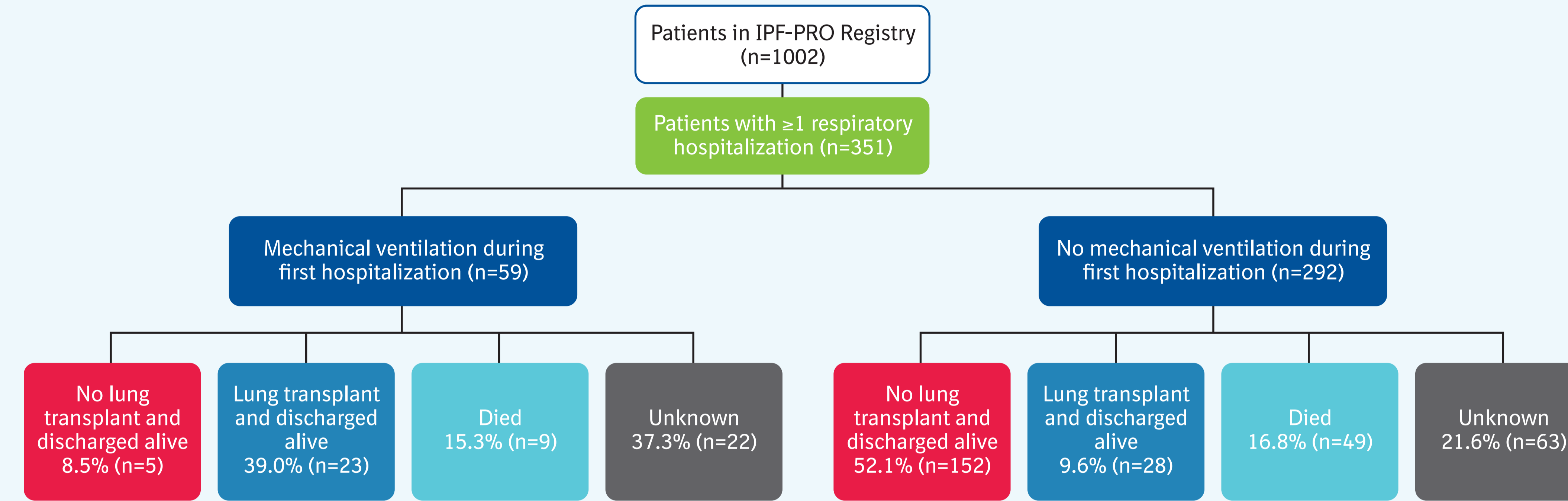
- Outcomes of the first hospitalization in subgroups by use of mechanical ventilation during that hospitalization were analyzed descriptively.
- Clinical characteristics at enrollment were analyzed in subgroups by shorter vs longer hospital stay (<7 vs ≥7 days).
- The risk of repeat respiratory hospitalization was analyzed using the Kaplan-Meier method among patients who did not receive mechanical ventilation during the first hospitalization.
- Changes in pulmonary function tests (PFTs) and health-related quality of life (measured using the St George's Respiratory Questionnaire [SGRQ])<sup>5</sup> before versus 3-9 months after the first respiratory hospitalization were assessed among patients who did not receive mechanical ventilation.

## CONCLUSIONS

- Respiratory-related hospitalizations were common among patients with IPF and were associated with high mortality.
- Patients who had a respiratory-related hospitalization had worse lung function and health-related quality of life 3-9 months following hospitalization than they did prior to the hospitalization.

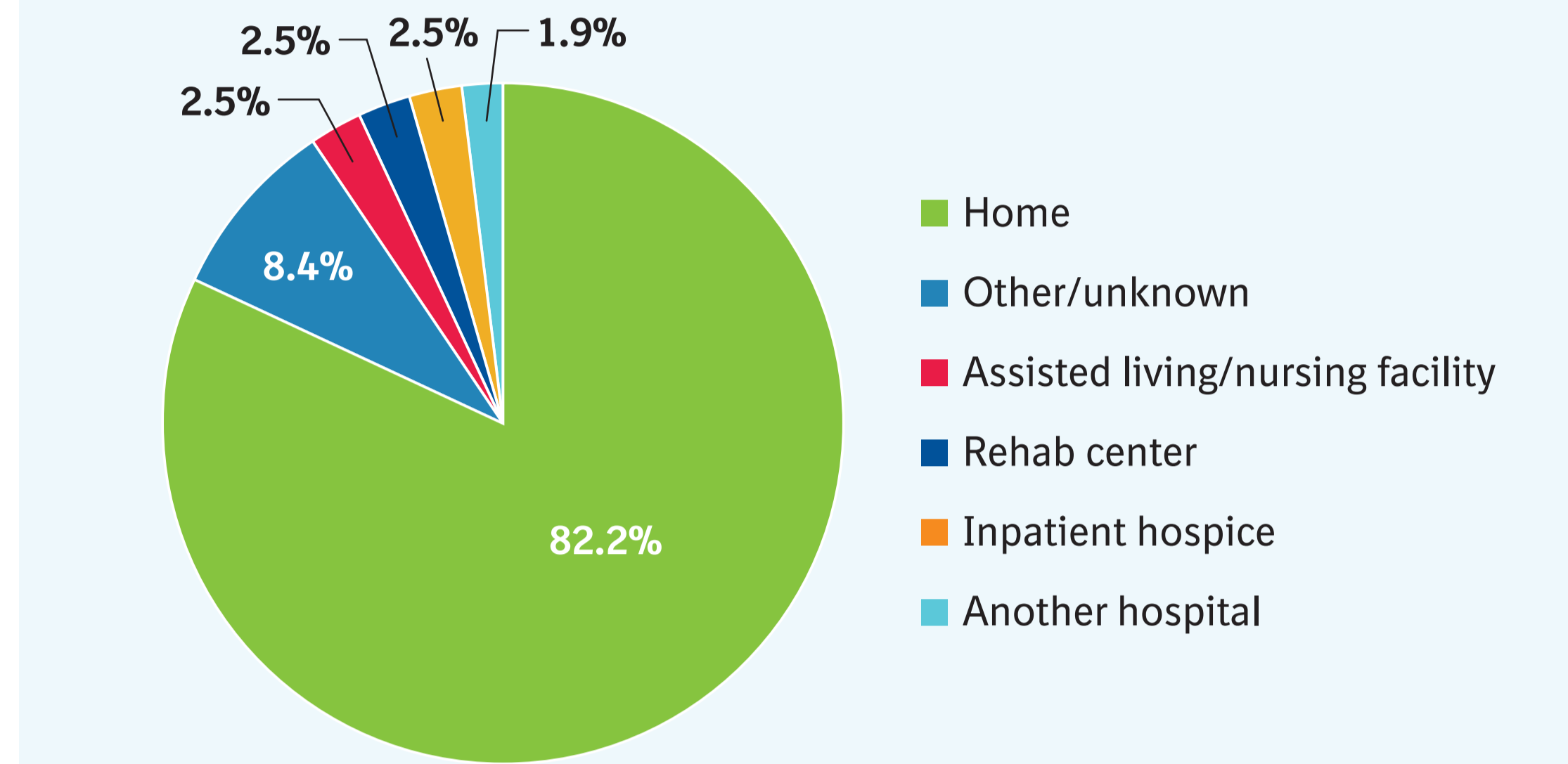
## RESULTS

### Respiratory hospitalizations and outcomes



Mean duration of follow-up: 2.8 years

### Destination of patients discharged alive from first respiratory hospitalization



N=157.

### Characteristics at enrollment in patients with shorter versus longer hospital stay

Characteristic	First respiratory hospitalization <7 days (n=102)	First respiratory hospitalization ≥7 days (n=55)
Male	72 (70.6)	42 (76.4)
Age, years	71 (64, 75)	70 (61, 77)
White	90 (91.8)	50 (90.9)
Body mass index, kg/m <sup>2</sup>	28.2 (26.0, 32.4)	28.9 (25.9, 32.4)
Current or former smoker	74 (72.5)	38 (69.1)
All-cause hospitalizations before enrollment		
0	82 (80.4)	45 (81.8)
1-2	15 (14.7)	5 (9.1)
>3	5 (4.9)	5 (9.1)
FVC % predicted	71.3 (60.9, 82.5)	69.4 (57.5, 78.2)
DLco % predicted	44.9 (36.8, 53.2)	34.4 (29.0, 47.8)

Based on patients discharged alive from first respiratory hospitalization (without a lung transplant). Data are median (Q1, Q3) or n (%). FVC and DLco are (% of patients with available data). 7 days was the 75th percentile (Q3) of length of hospital stay.

### Risk of repeat respiratory hospitalization among patients who did not receive mechanical ventilation

Months from first respiratory hospitalization	N at risk	Cumulative n (%) with repeat respiratory hospitalization
0	151	
2	103	31 (20.5)
4	83	41 (27.2)
6	72	45 (29.8)
8	63	48 (31.8)
10	52	55 (36.4)
12	41	61 (40.4)

Patients were censored if they had a hospitalization of any cause, had a lung transplant, or died. One patient had a missing discharge date for the first respiratory hospitalization and was not included in these analyses.

### Changes in PFTs and SGRQ scores before versus 3-9 months after respiratory hospitalization among patients who did not receive mechanical ventilation

Variable	Mean (SD) change
FEV <sub>1</sub> , L	-0.2 (0.2)
FVC, L	-0.2 (0.3)
FVC % predicted	-4.9 (8.5)
DLco % predicted	-3.6 (6.9)
SGRQ total score	5.4 (17.4)
SGRQ symptoms score	2.1 (23.2)
SGRQ activity score	4.9 (19.0)
SGRQ impact score	6.7 (20.5)

N=62 for changes in FEV<sub>1</sub> and FVC; n=52 for changes in DLco; n=44 for change in SGRQ total score; n=45 for changes in SGRQ domain scores. Median time between hospital discharge and PFT collection was 166 days. Median time between hospital discharge and SGRQ collection was 176 days.

## REFERENCES

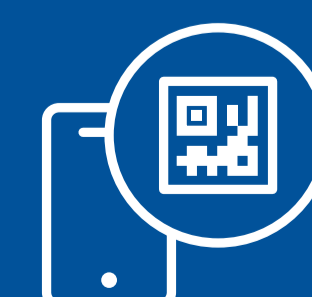
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IPF-PRO Registry enrolling centers: Albany Medical Center, Albany, NY; Baylor College of Medicine, Houston, TX; Baylor University Medical Center at Dallas, Dallas, TX; Cleveland Clinic, Cleveland, OH; Columbia University Medical Center/New York Presbyterian Hospital, New York, NY; Duke University Medical Center, Durham, NC; Froedtert & The Medical College of Wisconsin Community Physicians, Milwaukee, WI; Houston Methodist Lung Center, Houston, TX; Lahey Clinic, Burlington, MA; Loyola University Health System, Maywood, IL; Lynchburg Pulmonary Associates, Lynchburg, VA; Medical University of South Carolina, Charleston, SC; National Jewish Health, Denver, CO; NYU Medical Center, New York, NY; Piedmont Healthcare, Austell, GA; Pulmonary Associates of Stamford, Stamford, CT; Pulmonix LLC, Greensboro, NC; Renovatio Clinical, The Woodlands, TX; Salem Chest and Southeastern Clinical Research Center, Winston Salem, NC; South Miami Hospital, South Miami, FL; St. Joseph's Hospital, Phoenix, AZ; Stanford University, Stanford, CA; Temple University, Philadelphia, PA; The Oregon Clinic, Portland, OR; Tulane University, New Orleans, LA; UNC Chapel Hill, Chapel Hill, NC; University of Alabama at Birmingham, Birmingham, AL; University of California, Davis, Sacramento, CA; University of California Los Angeles, Los Angeles, CA; University of Cincinnati Medical Center, Cincinnati, OH; University of Louisville, Louisville, KY; University of Miami, Miami, FL; University of Michigan, Ann Arbor, MI; University of Minnesota, Minneapolis, MN; University of Pennsylvania, Philadelphia, PA; University of Pittsburgh, Pittsburgh, PA; University of Virginia, Charlottesville, VA; UT Southwestern Medical Center, Dallas, TX; Vanderbilt University Medical Center, Nashville, TN; Vermont Lung Center, Colchester, VT; Wake Forest University, Winston Salem, NC; Washington University, St. Louis, MO; Weill Cornell Medical College, New York, NY; Wilmington Health and PMG Research, Wilmington, NC; Yale School of Medicine, New Haven, CT.

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