

## Welcome to the COVID-CF project in Europe

CF patient registries throughout Europe have collected data about people with CF who become infected with SARS-Cov-2, causing the illness COVID-19.

Countries that contribute annual data to the ECFS Patient Registry (ECFSPR; [www.ecfs.eu/ecfspr](http://www.ecfs.eu/ecfspr)) were invited to report COVID-19 case data of people with a confirmed diagnosis of CF. Centres reported data directly to the ECFSPR, and aggregated data was provided by national registries that use their own data-collection system. Here we present centralised, anonymised data, which we hope to update weekly.

It is possible that not all cases have been reported yet. Since the data is preliminary, incomplete, might change over time, and the number of cases is low, the information should not be used to direct clinical decisions. A more substantial statistical analysis will be performed and published at a later date.

Definitions are provided for all the variables measured at the end of this report.

### Summary (up to 30 June 2020)

126 121 9 3

People with CF have confirmed COVID-19

Case data available

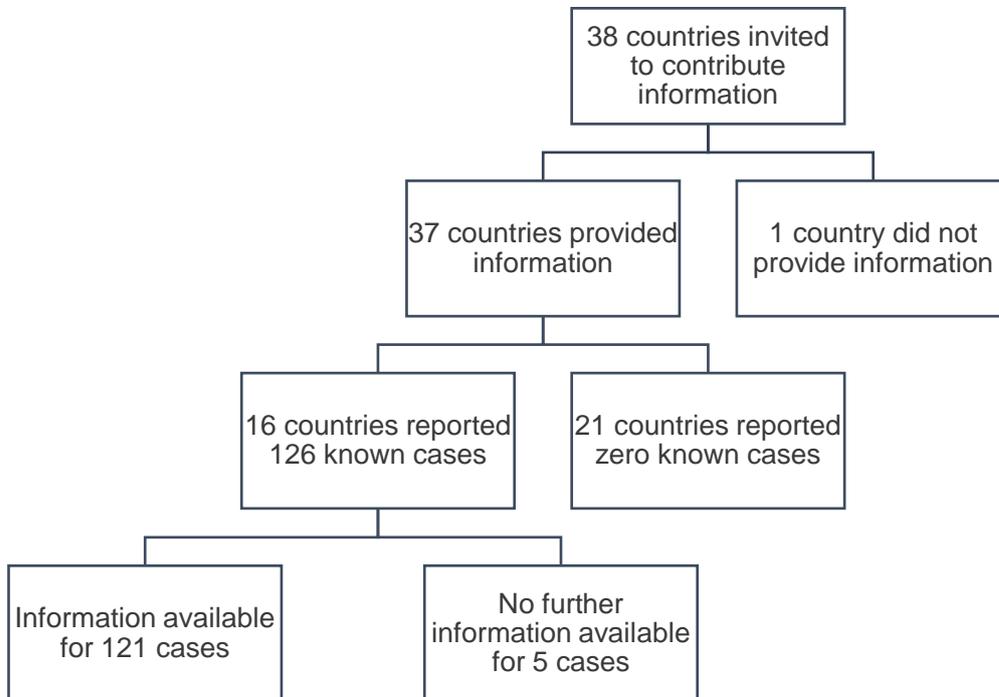
Needed intensive care

Died

- 19 critical cases
- 3 people with CF and COVID-19 died
- The most treatments were azithromycin and additional antibiotics (oral and intravenous)

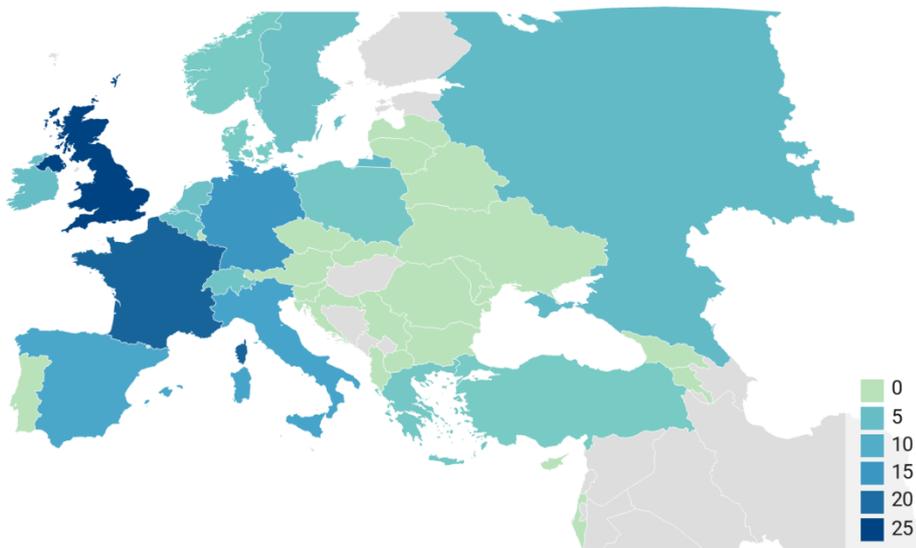
## Distribution in Europe

The following flow chart presents the number of countries that reported COVID-19 cases in people with CF by 30 June 2020.



## COVID-19 in people with CF

Data up to 30 June 2020



Countries in grey did not submit any information

Created with Datawrapper

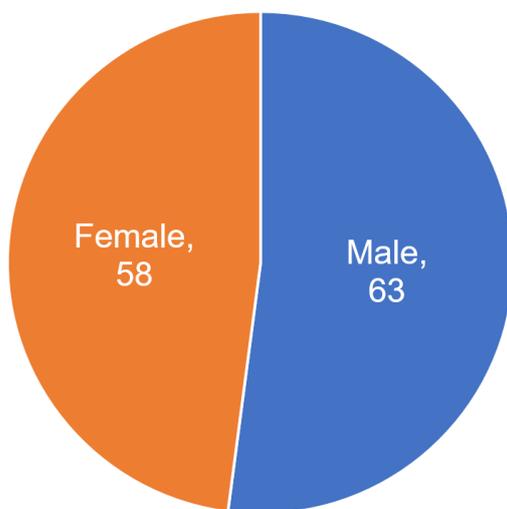
## Summary data for the 121 cases with information

The rest of this report presents data for the 121 reported cases with at least partial data. If case reports were incomplete, the missing information has not been considered.

### Demographics

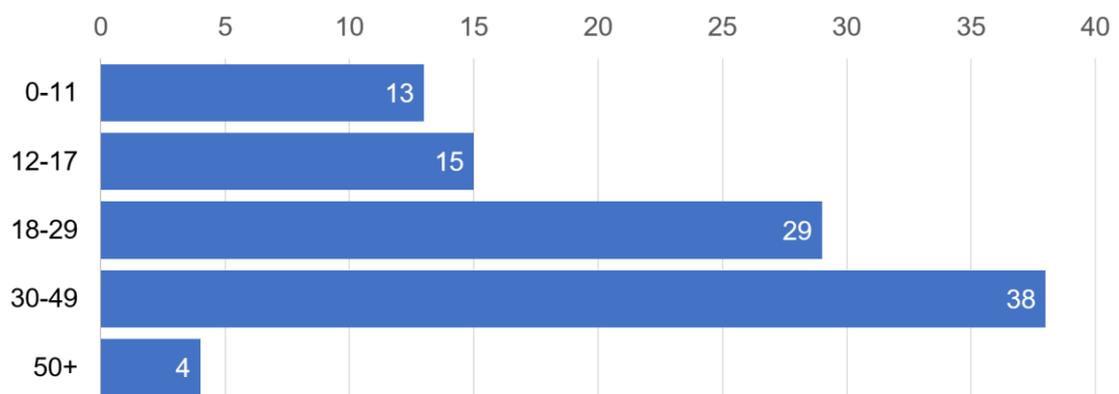
#### Gender

Number of patients (n=121)



#### Age category (years)

Number of patients (n=99\*)

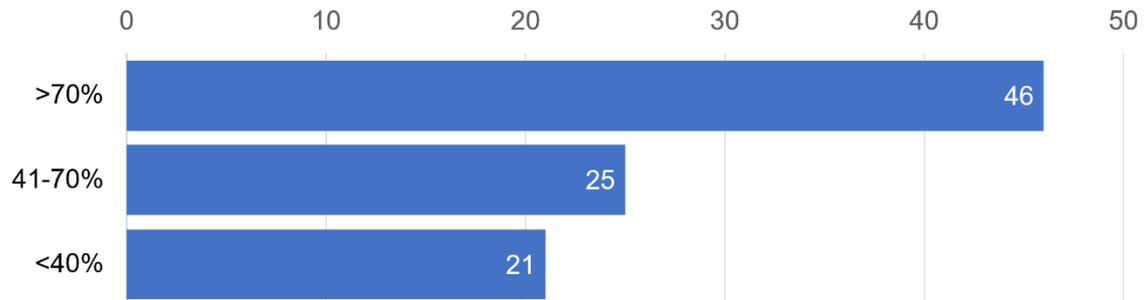


\*Data were not available in this format for 22 patients

## Cystic fibrosis characteristics

### Percent predicted FEV<sub>1</sub>, by category

Number of patients (n=103\*)



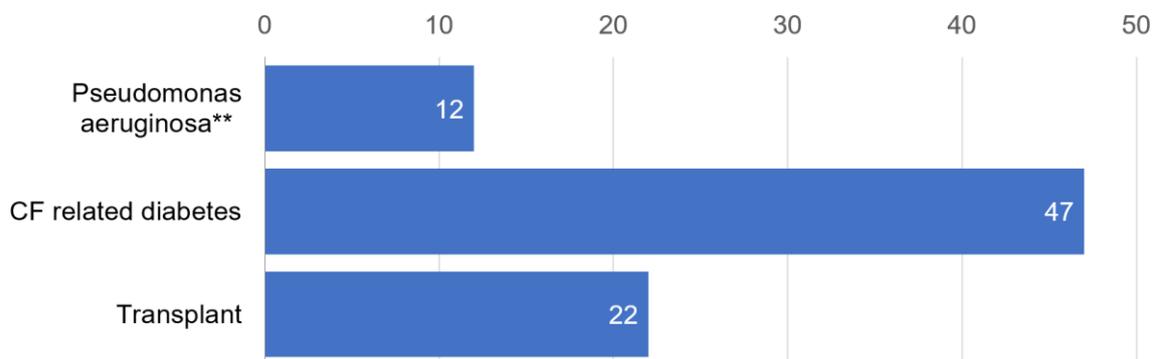
Abbreviation: ppFEV<sub>1</sub> = percent predicted forced expiratory volume in one second

\*Data were not available in this format for 18 patients

## Other cystic fibrosis characteristics

Number of patients (n=103\*)

Patients could have more than one characteristic



\*Data were not available in this format for 18 patients

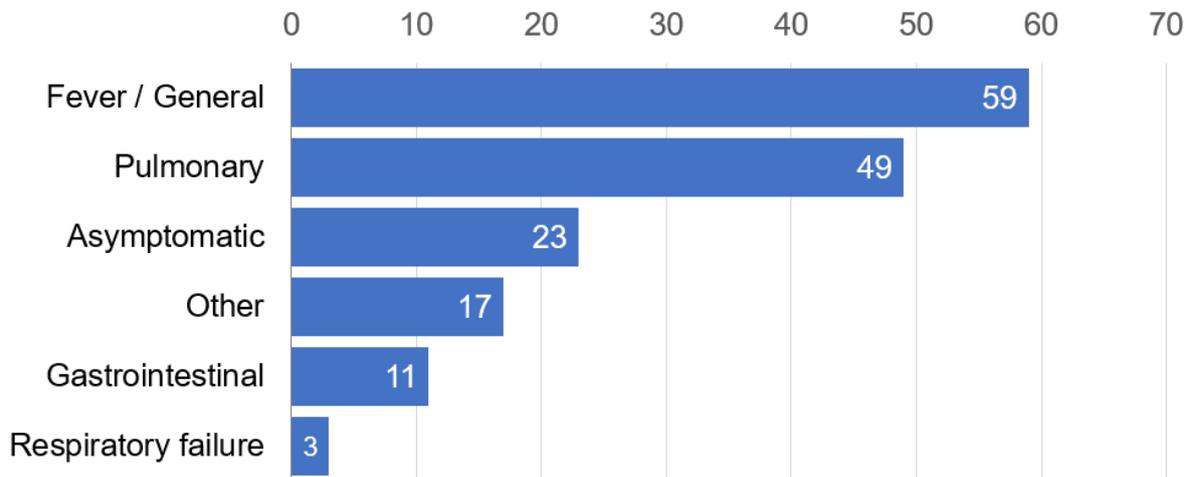
\*\* in the last 12 months (data for *Pseudomonas* infection were not available in this format for a further 25 patients).

# COVID-19 symptoms

## Categories of symptoms

### Number of patients (n=73\*)

Patients could have symptoms in more than one category



\*Data were not available in this format for 48 patients

Patients could have more than one symptom.

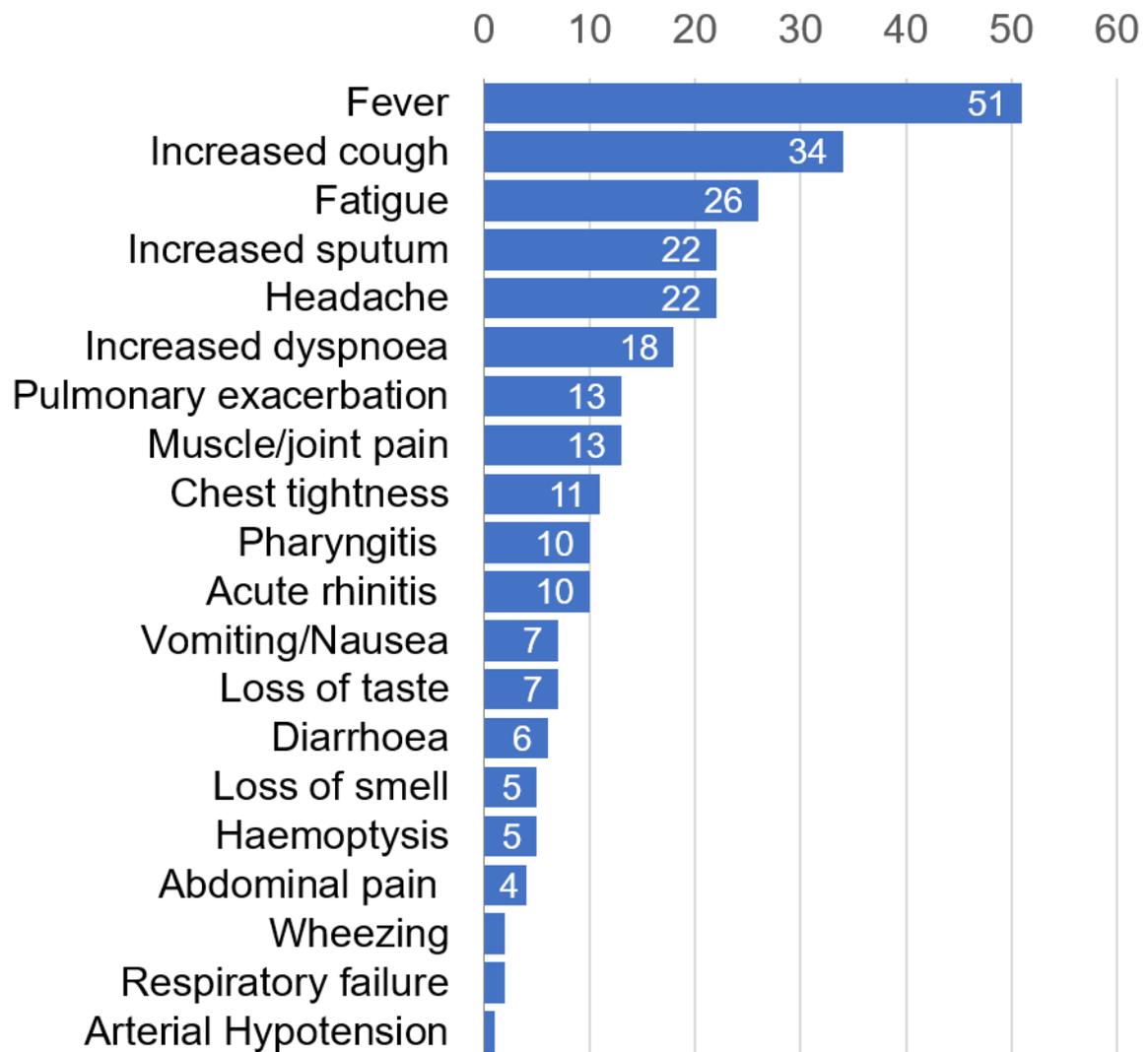
Categories of symptoms:

- Pulmonary symptoms: increased cough, dyspnoea, chest tightness, wheezing, sputum production, haemoptysis
- Fever / General symptoms: fever, fatigue, headache, arthralgia/myalgia
- Other: none of the above
- Asymptomatic: none of the symptoms reported
- Gastrointestinal symptoms: diarrhoea, vomiting/nausea, abdominal pain
- Respiratory failure: respiratory failure

Individual symptoms

**Number of patients (n=69\*)**

Patients could have more than one symptom



\*Data were not available in this format for 52 patients

## COVID-19 severity

Number of patients (n=96\*)



\*Data were not available in this format for 25 patients

**Mild:** Patients without pneumonia or cases of mild pneumonia

**Severe:** Patients who suffered from shortness of breath, respiratory frequency  $\geq 30$ /minute, blood oxygen saturation  $\leq 93\%$ , PaO<sub>2</sub>/FiO<sub>2</sub> ratio  $< 300$ , and/or lung infiltrates  $> 50\%$  within 24–48 hours

**Critical:** Patients who suffered respiratory failure, septic shock, and/or multiple organ dysfunction or failure.

Source: <http://www.ourphn.org.au/wp-content/uploads/20200225-Article-COVID-19.pdf>

## COVID-19 treatment

Place of care



66 patients  
were hospitalised

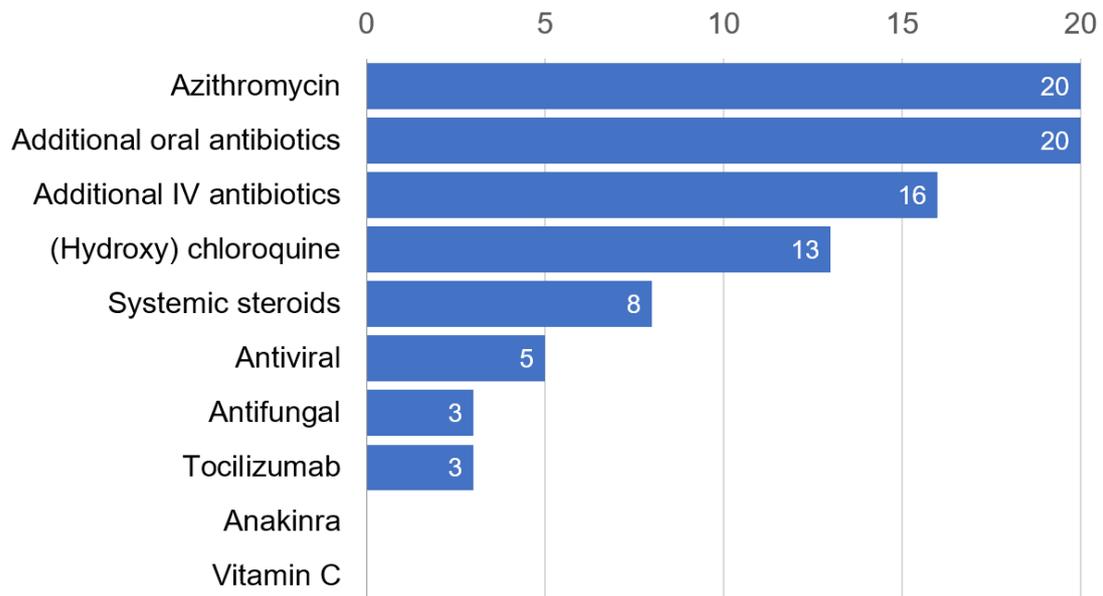


9 hospitalised patients  
needed ICU care

## Pharmacological treatment

### Number of patients (n=69\*)

Patients could receive more than one treatment



\*Data were not available in this format for 52 patients

## Oxygen and respiratory support

|  | Number of patients with information<br>N=103 |
|--|--|
| Oxygen therapy needed                  | 25   |
| Respiratory support needed*            | 6  |
| Non-invasive ventilation (BIPAP, CPAP) | 2  |
| High flow nasal canula oxygen therapy  | 2  |
| Invasive Ventilation                   | 2  |
| ECMO                                   | 1  |

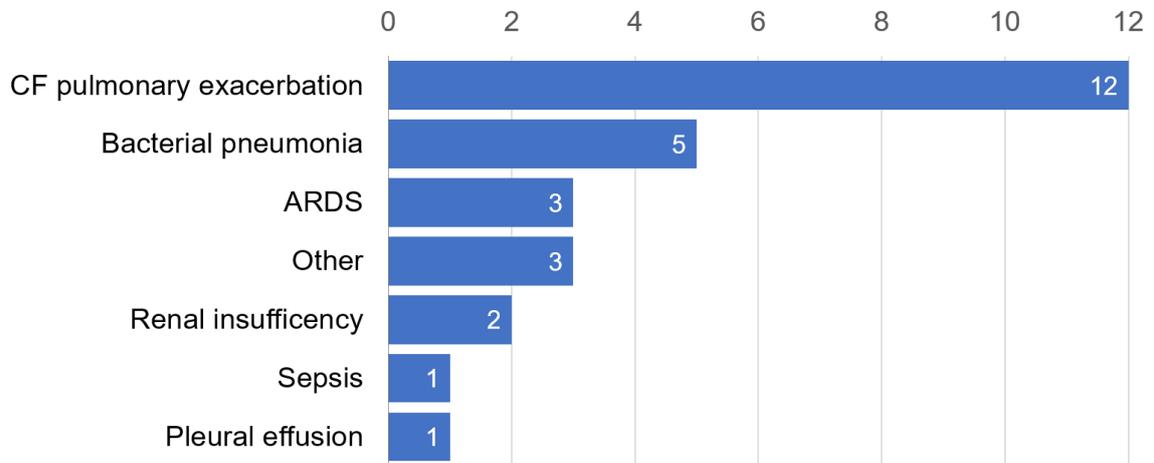
Abbreviations: BIPAP = bi-level positive airway pressure, CPAP = continuous positive airway pressure, ECMO = extra corporeal membrane oxygenation

\* In certain cases, patients can have more than one type of respiratory support (e.g. ECMO and invasive ventilation). Therefore the numbers of patients who needed each type of respiratory support may exceed the total number of patients who needed respiratory support.

## COVID-19 complications

### Number of patients (n=69\*)

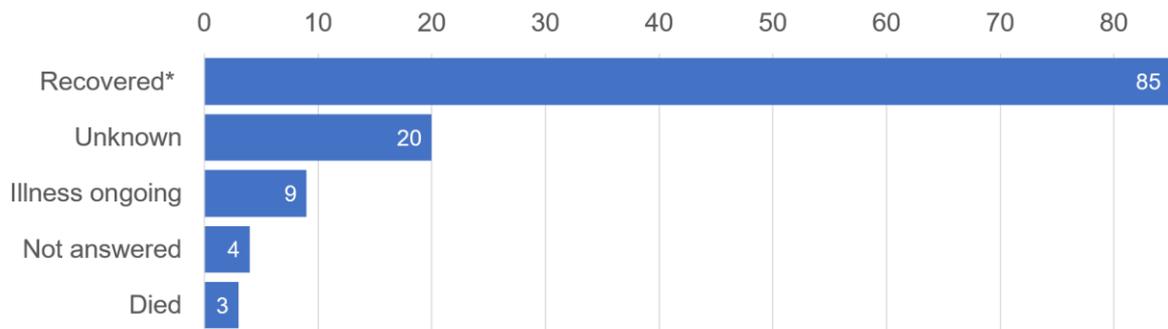
Patients could have more than one complication



\*Data were not available in this format for 52 patients  
ARDS = acute respiratory distress syndrome

## COVID-19 outcomes

### Number of patients (n=121)



\*or discharged alive from hospital

## Footnotes and references

For data submitted directly to ECFSPR, the following references were used for computation of ppFEV<sub>1</sub>.

- Percent predicted FEV<sub>1</sub> was calculated using the calculator <http://gligastransfer.org.au/calcs/spiro.html> based on the last 3 FEV<sub>1</sub> (pre-bronchodilator) measurements before infection with SARS-Cov-2.

Icons are from:

- Home by Kahalap from the Noun Project
- Hospital by Made from the Noun Project
- Medical treatment by visual world from the Noun Project