

## 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 20 May 2020)

65

People with CF have confirmed COVID-19

56

Case data available

6

Needed intensive care

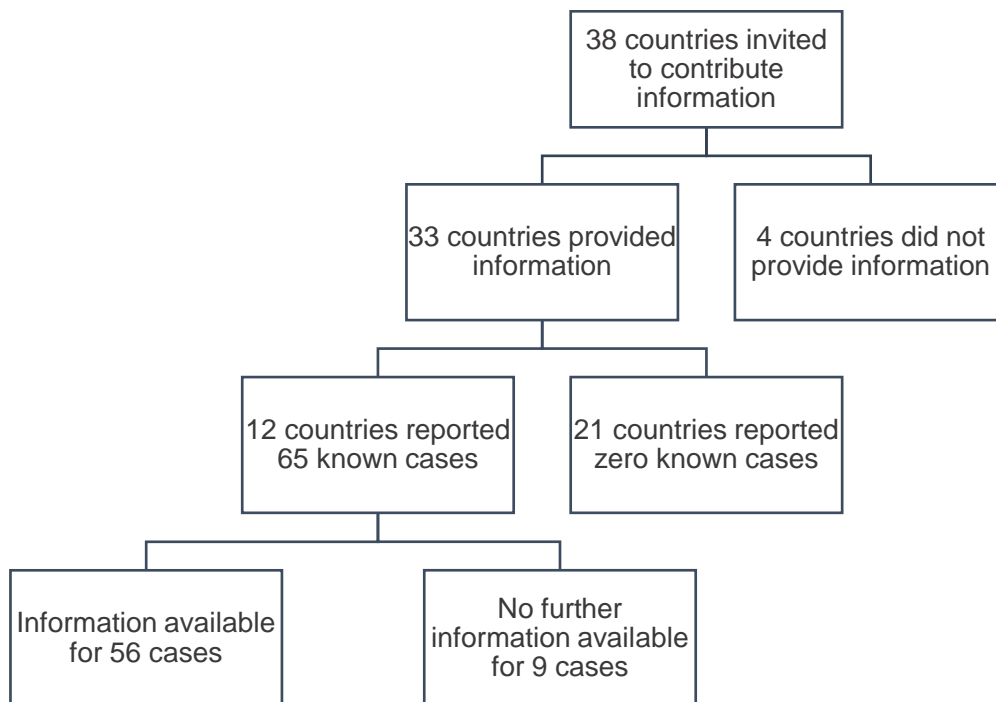
3

Died

- 3 critical cases
- Three person with CF and COVID-19 died
- A range of therapies used

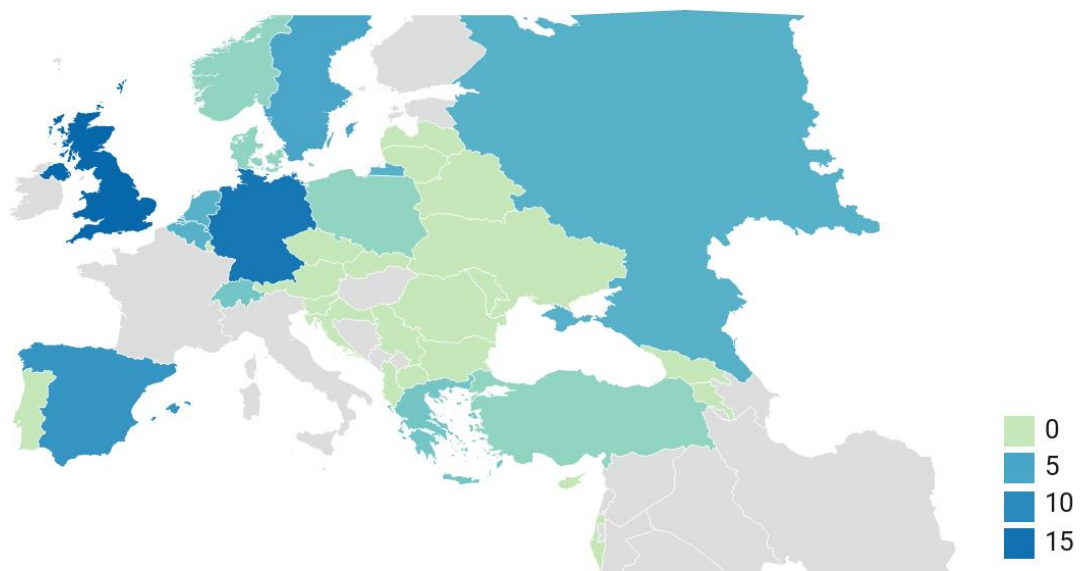
## Distribution in Europe

The following flow chart presents the number of countries that reported COVID-19 cases in people with CF by 20 May 2020.



## COVID-19 in people with CF

Data up to 20 May 2020



Countries in grey did not submit any information

Created with Datawrapper

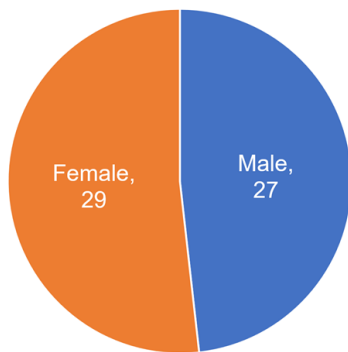
## Summary data for the 56 cases with information

The rest of this report presents data for the 56 reported cases. If case reports were incomplete, the missing information has not been considered.

### Demographics

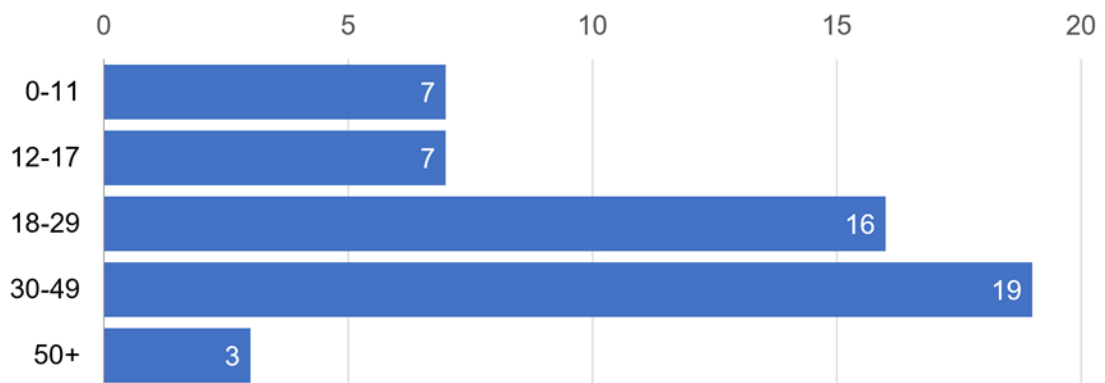
#### Gender

Number of patients (n=52)



#### Age category (years)

Number of patients (n=52\*)

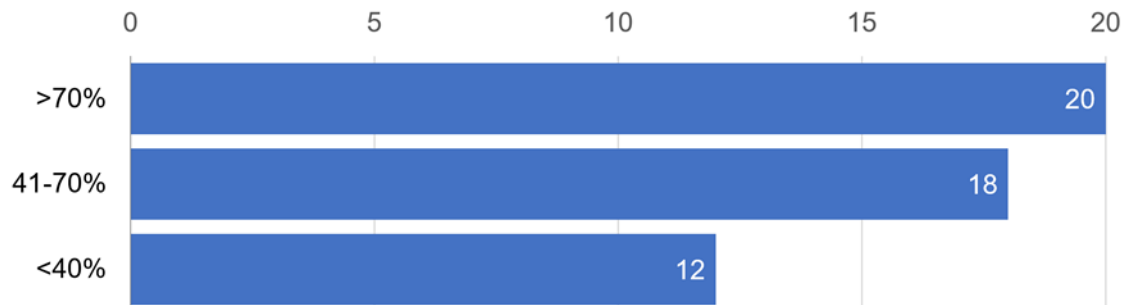


\*Data were not available in this format for 4 patients

## Cystic fibrosis characteristics

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

Number of patients (n=52)

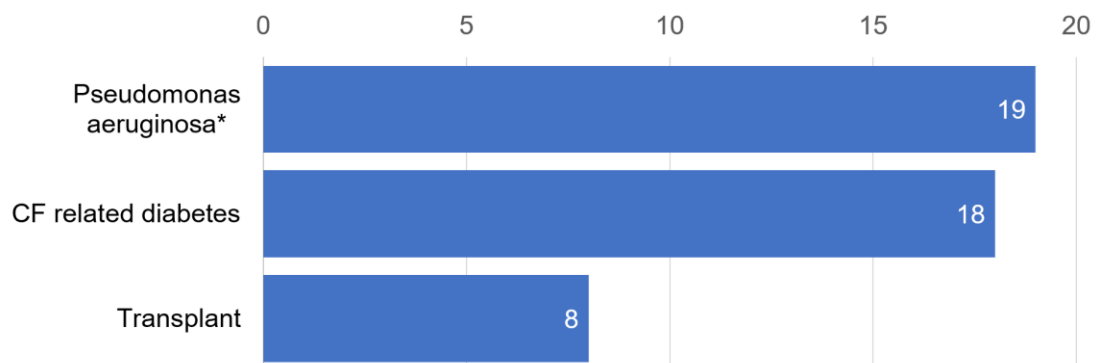


Abbreviation: ppFEV<sub>1</sub> = percent predicted forced expiratory volume in one second

## Other cystic fibrosis characteristics

Number of patients (n=52)

Patients could have more than one characteristic



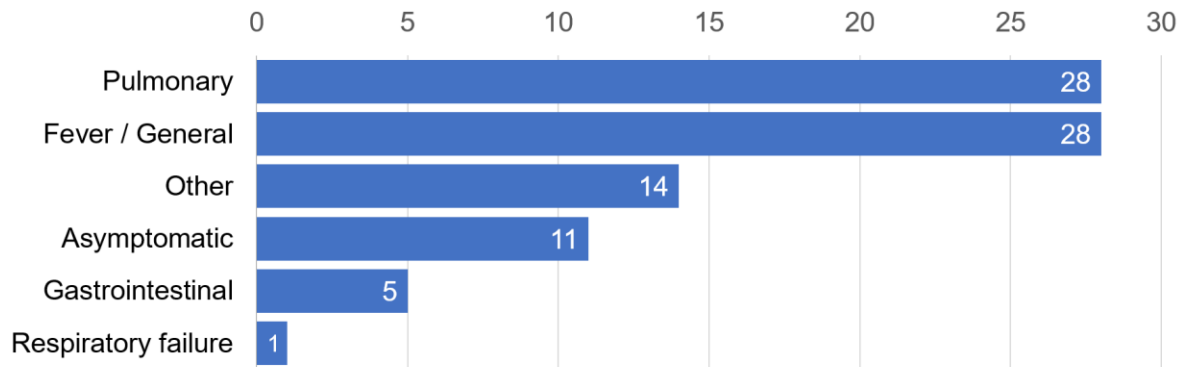
\* in the last 12 months (data for *Pseudomonas* infection were not available in this format for 18 patients).

# COVID-19 symptoms

## Categories of symptoms

### Number of patients (n=34\*)

Patients could have symptoms in more than one category



\*Data were not available in this format for 22 patients  
Patients could have more than one symptom.

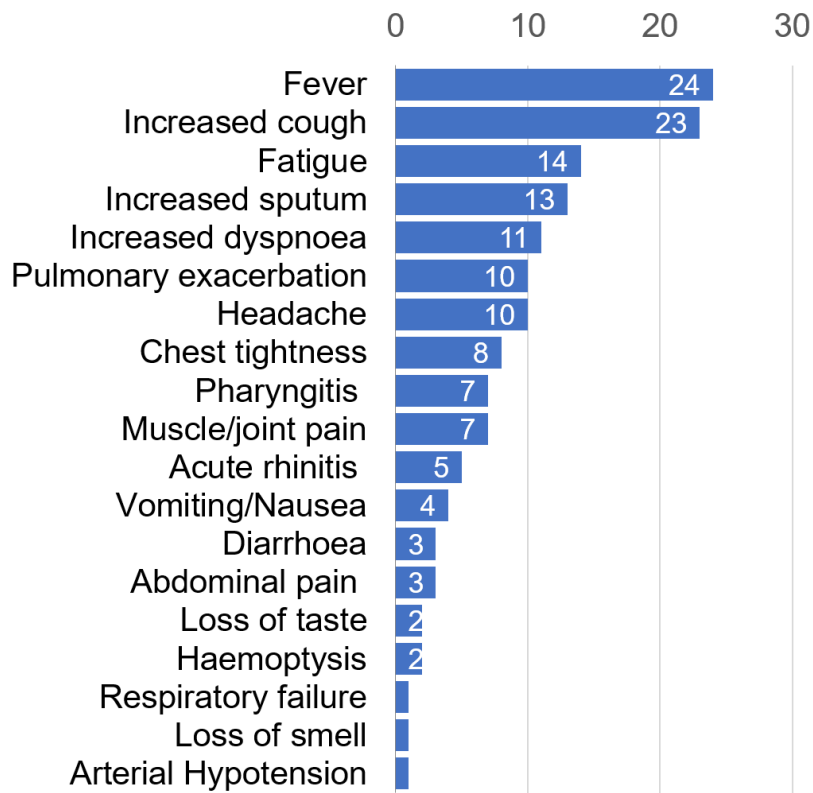
Categories of symptoms:

- 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
-

## Individual symptoms

### Number of patients (n=34\*)

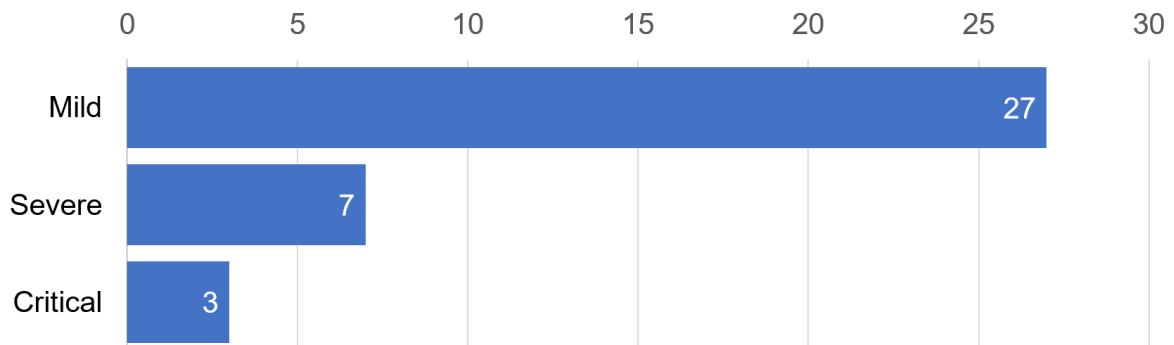
Patients could have more than one symptom



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

## COVID-19 severity

Number of patients (n=37\*)



\*Data were not available in this format for 19 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  $\leq 93\%$ ,  $\text{PaO}_2/\text{FiO}_2$  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.

## COVID-19 treatment

Place of care



35 patients  
were hospitalised

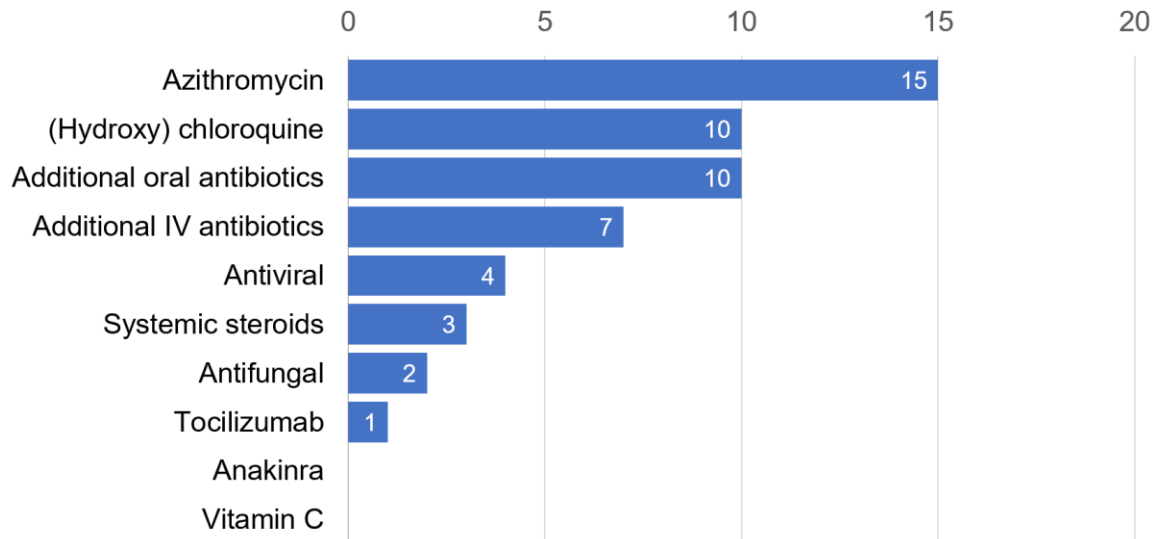


6 hospitalised patients  
needed ICU care

## Pharmacological treatment

### Number of patients (n=34\*)

Patients could receive more than one treatment



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

## Oxygen and respiratory support

	Number of patients
Oxygen therapy needed	16
Respiratory support needed*	2
Non-invasive ventilation (BIPAP, CPAP)	1
High flow nasal canula oxygen therapy	0
Invasive Ventilation	1
ECMO	1

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

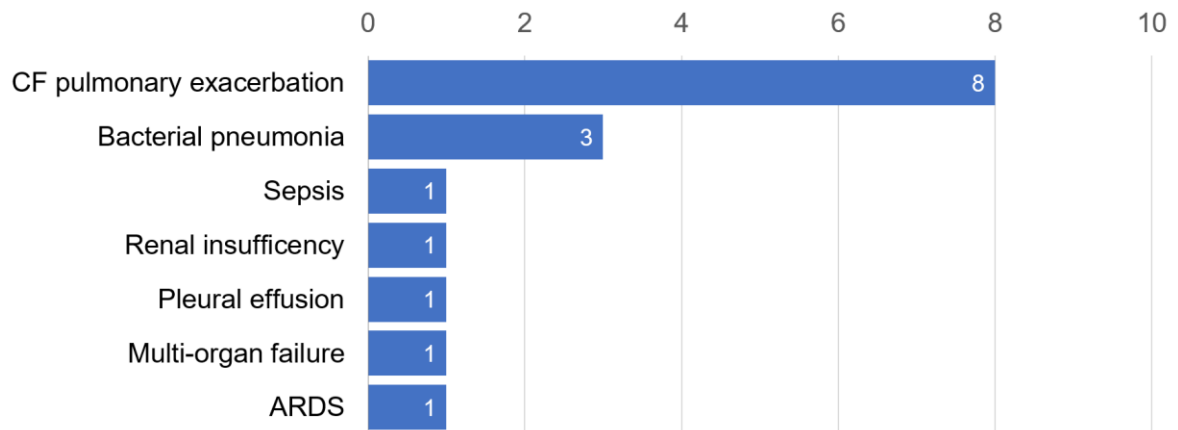
\* In certain cases, patients can have more than one type of respiratory support (e.g. ECMO and invasive ventilation). Therefore the numbers of patients who needed each type of respiratory support may exceed the total number of patients who needed respiratory support.



## COVID-19 complications

### Number of patients (n=34\*)

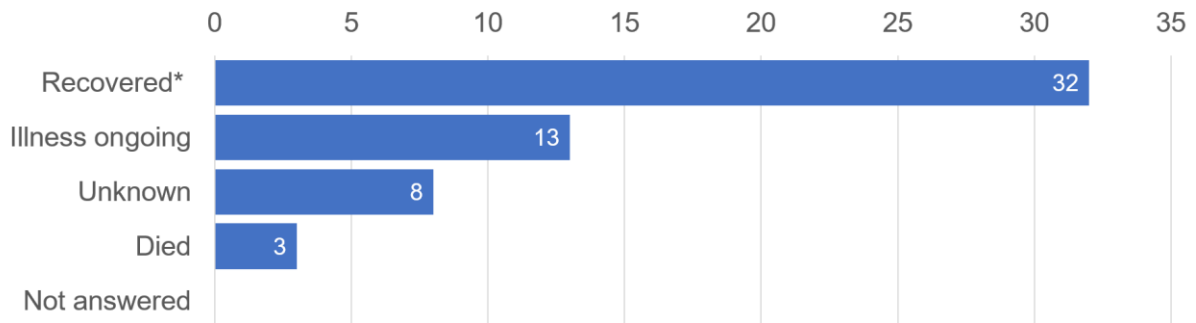
Patients could have more than one complication



\*Data were not available in this format for 22 patients  
ARDS = acute respiratory distress syndrome

## COVID-19 outcomes

### Number of patients (n=52)



\*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