

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) were invited to report COVID-19 case data of people with a PCR-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 later.

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

Summary (up to 16 April 2021)

1136

People with CF
have COVID-19
(including some cases not
confirmed by PCR)

946

PCR-confirmed
cases with data
available

30

Needed
intensive care

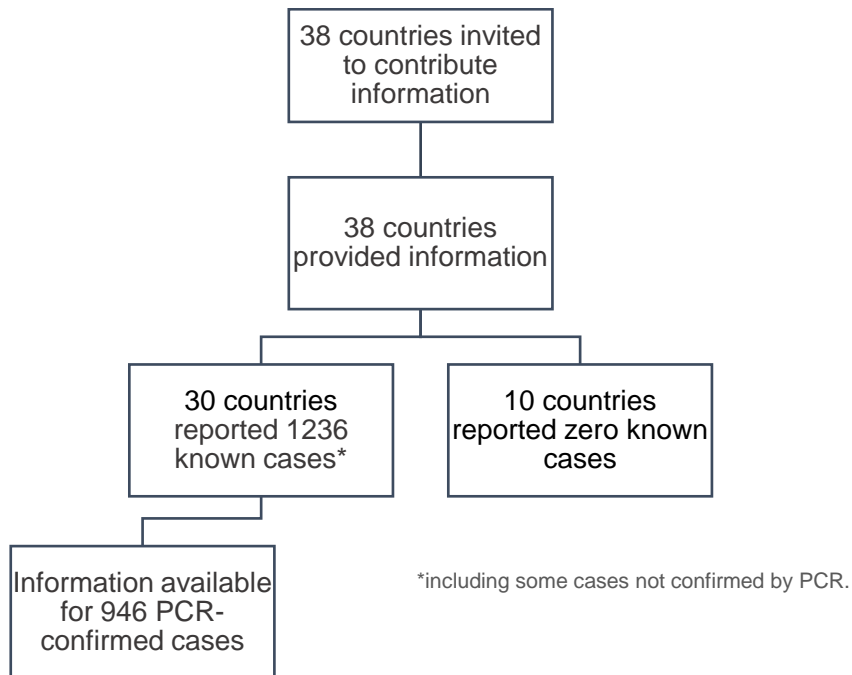
13

Died

- 23 critical cases
- The most common treatments were additional antibiotics (oral and intravenous) and systemic steroids

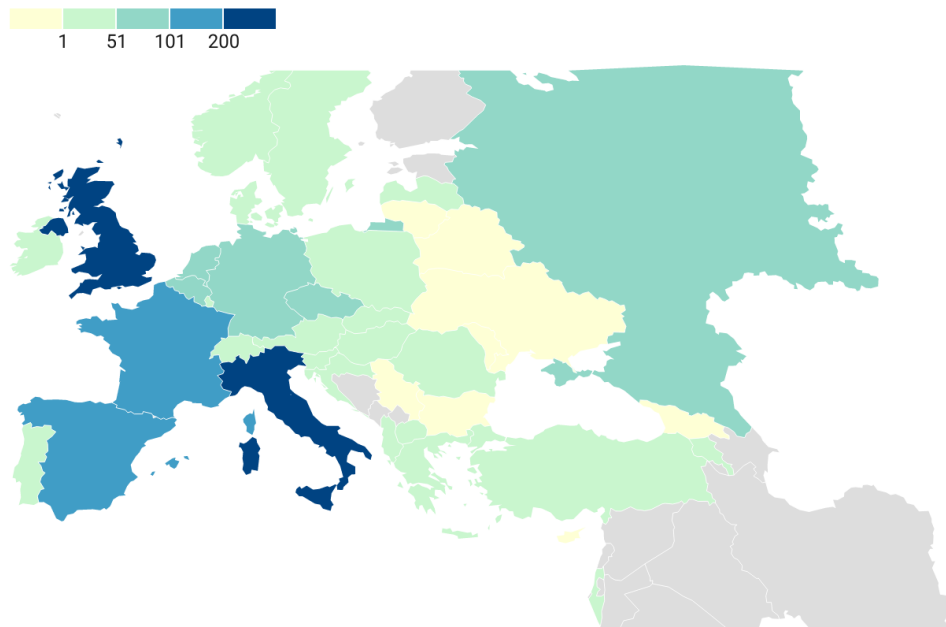
Distribution in Europe

The following flow chart presents the number of countries that reported COVID-19 cases in people with CF by 16 April 2021.



COVID-19 in people with CF

Data up to 16 April 2021 (n=1236)



Countries in grey not in ECFSPR

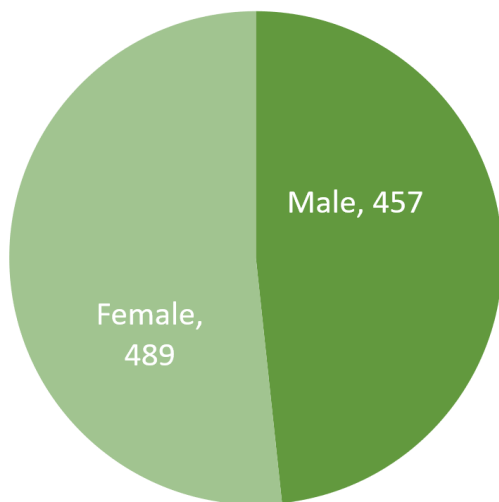
Created with Datawrapper

Summary data for the 946 cases with information

The rest of this report presents data for the 946 reported cases with at least partial data. If case reports were incomplete, the missing information has not been considered.

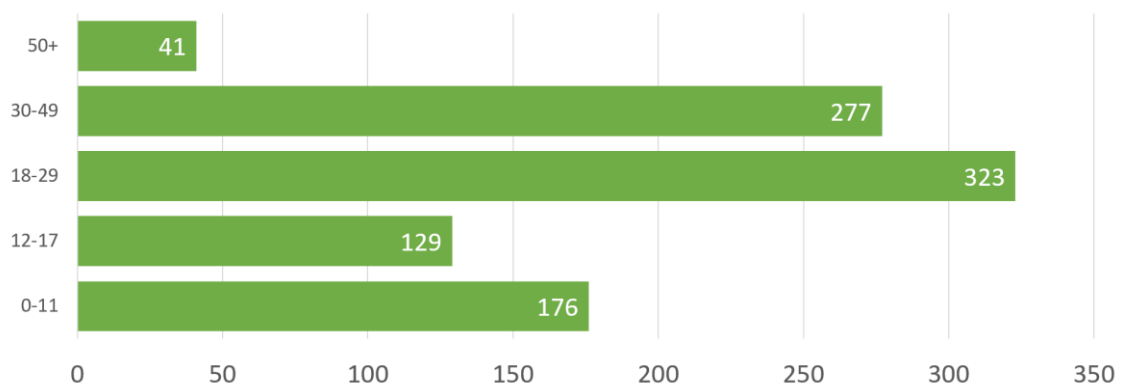
Demographics

Gender



Age category (years)

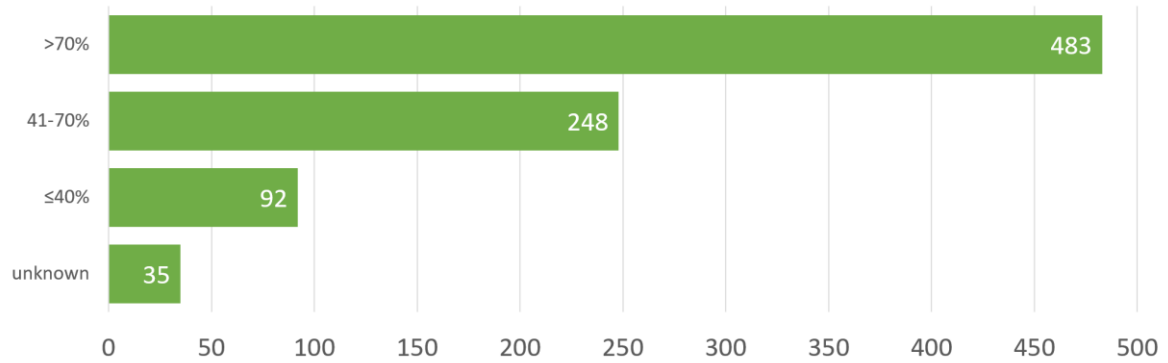
Number of patients (n=946)



Cystic fibrosis characteristics

Percent predicted FEV₁, by category

Number of patients (n=858*)



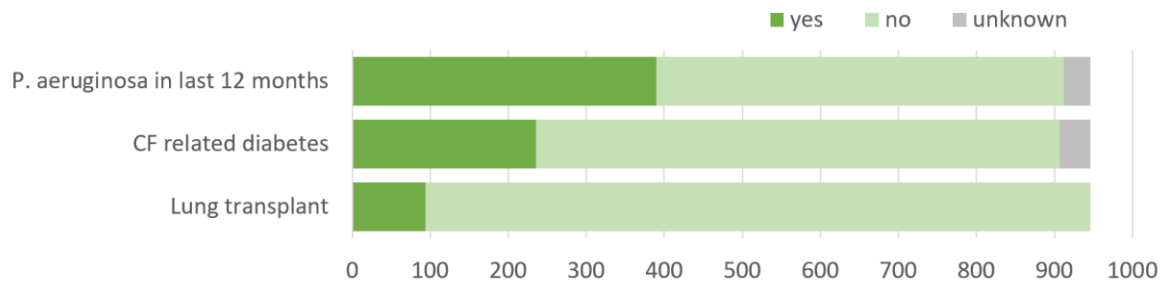
Note: ppFEV₁ = percent predicted forced expiratory volume in one second.

*Percent predicted FEV₁ was only calculated for patients aged 6 years and over

Other cystic fibrosis characteristics

Number of patients (n=946)

Patients could have between 0 and 3 of these characteristics

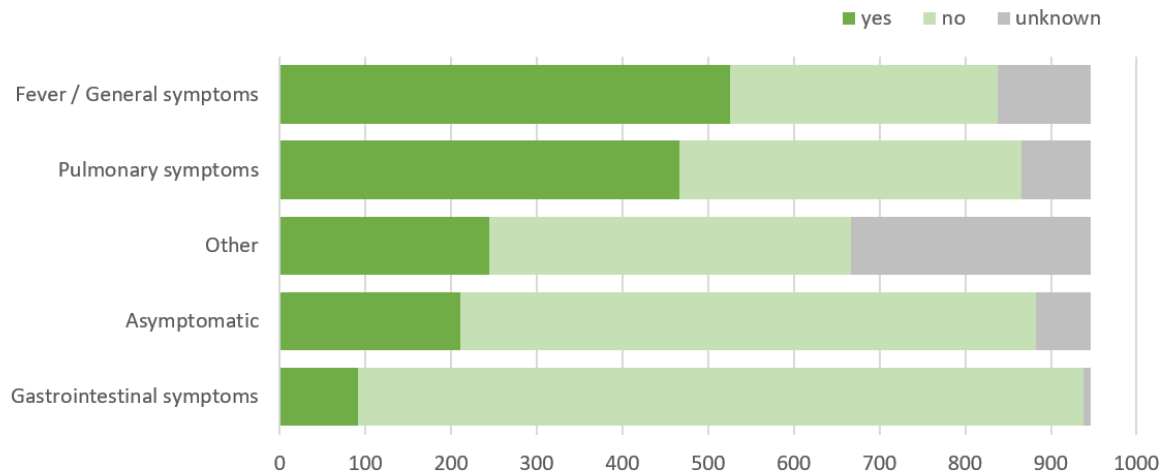


COVID-19 symptoms

Categories of symptoms

Number of patients (n=946)

Patients could symptoms in more than one category



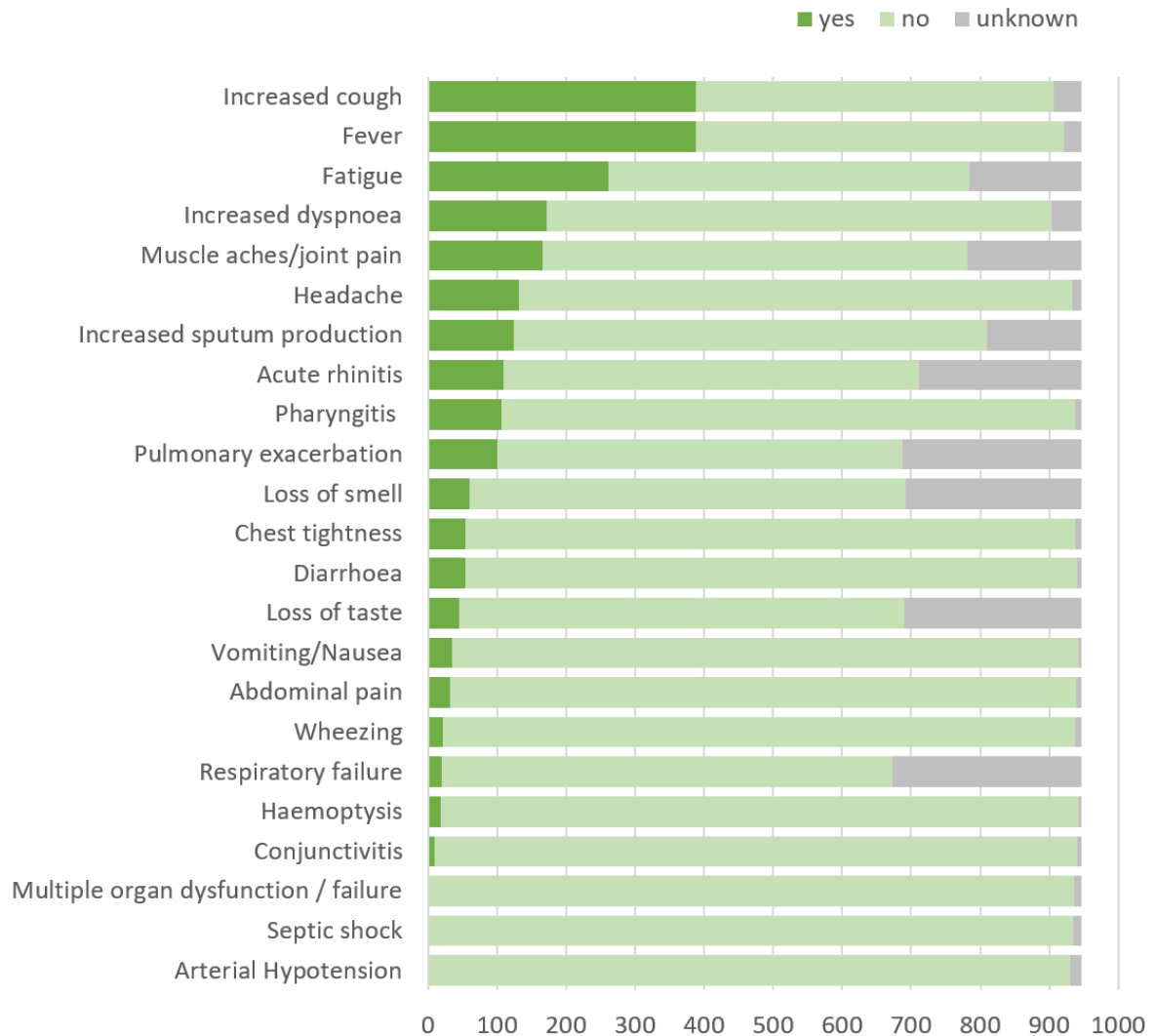
Categories of symptoms:

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

Individual symptoms

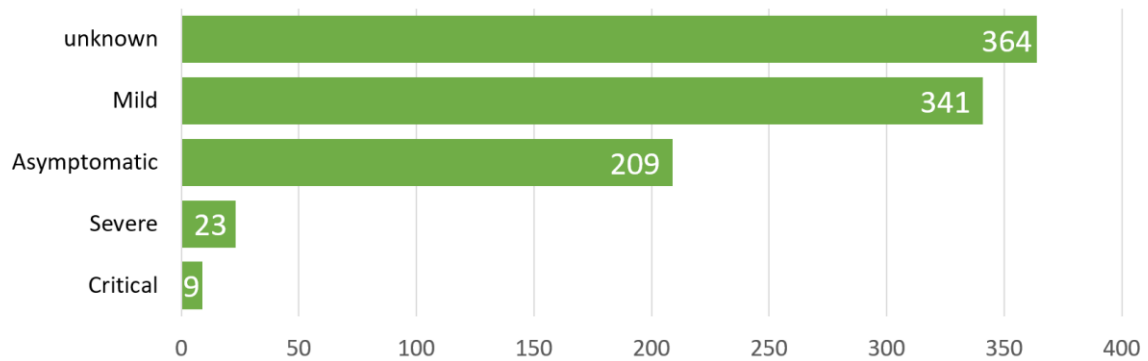
Number of patients (n=946)

Patients could have more than one symptom



COVID-19 severity

Number of patients (n=946)



Mild: Patients without pneumonia or cases of mild pneumonia

Severe: Patients who suffered from shortness of breath, respiratory frequency ≥ 30 /minute, blood oxygen saturation $\leq 93\%$, PaO₂/FiO₂ 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



217 patients
were hospitalised



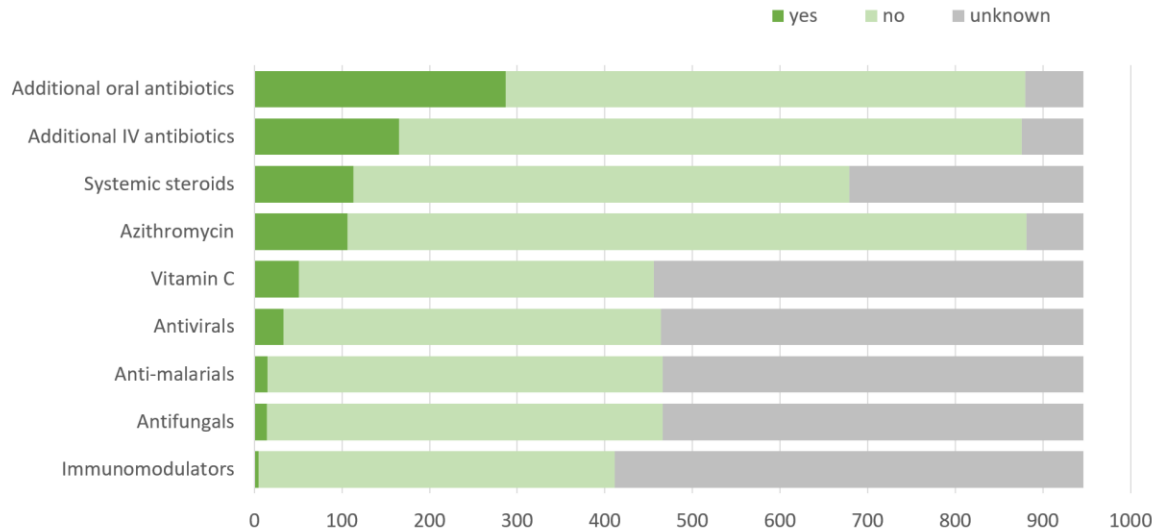
30 hospitalised patients
needed ICU care

COVID-19 treatment

Pharmacological treatment

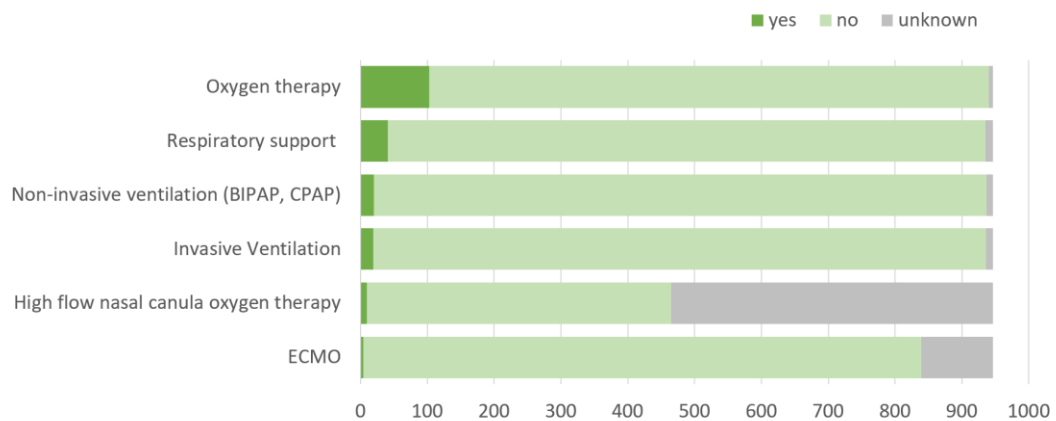
Number of patients (n=946)

Patients could receive more than one treatment



Oxygen and respiratory support

Number of patients (n=946)



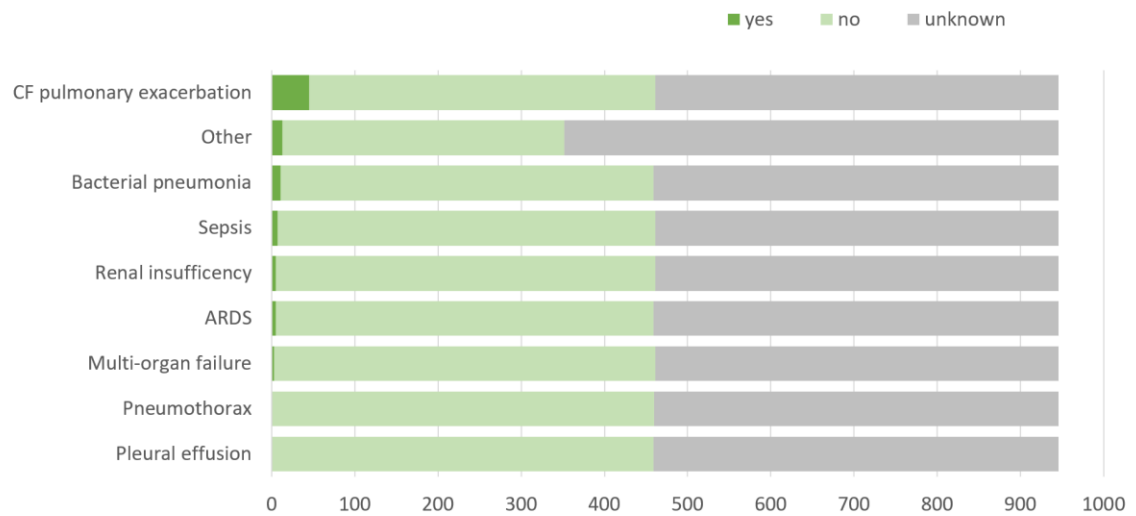
Abbreviations: BIPAP = bi-level positive airway pressure, CPAP = continuous positive airway pressure, ECMO = extra corporeal membrane oxygenation

* 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

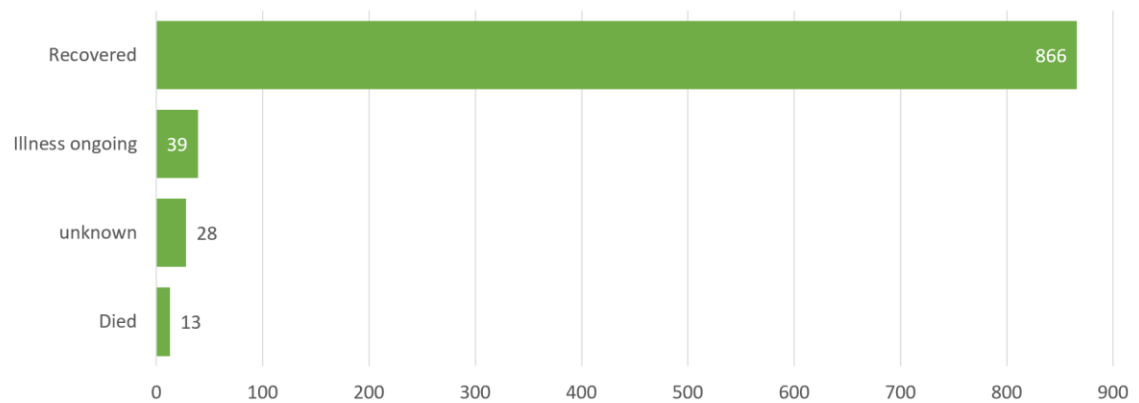
Number of patients (n=946)

Patients could have more than one complication



COVID-19 outcomes

Number of patients (n=946)



Footnotes and references

For data submitted directly to ECFSPR, the following references were used for computation of ppFEV₁.

- Percent predicted FEV₁ was calculated using the calculator <http://gligastransfer.org.au/calcs/spiro.html> based on the last 3 FEV₁ (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