I-MOVE-COVID-19 Network

Multidisciplinary European network for research, prevention and control of the COVID-19 pandemic

COVID-19 European primary care surveillance:
First surveillance bulletin

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Version	Date finalised	Created/modified by	Comments
v1.4	7 Sep 2020	Nivel/Epiconcept	First draft, shared with partners
v2	15 Sep 2020	Nivel/Epiconcept	Final version incorporating partners' comments

Abbreviations

ARI	Acute respiratory infection
COVID-19	Coronavirus disease 2019
EEA	European Economic Area
ECDC	European Centre for Disease Prevention and Control
EU	European Union
GP	General Practitioner
ILI	Influenza-like illness
I-MOVE	Influenza – Monitoring Vaccine Effectiveness in Europe
SARS-CoV-2	Severe acute respiratory syndrome – coronavirus 2
VE	Vaccine effectiveness

1. Summary

This surveillance report summarises the information from the I-MOVE-COVID-19 primary care surveillance networks to monitor the COVID-19 pandemic in seven European countries. The I-MOVE-COVID-19 surveillance in primary care aims to reinforce and complement the COVID-19 epidemiological data in the EU/EEA and the UK, compiled and reported by ECDC. Throughout this surveillance report, persons who tested positive for SARS-CoV-2 virus in primary care are referred to as "COVID-19 cases".

From March to the end of July, surveillance data was provided by three participating networks. In two further networks, COVID-19 surveillance is operational and clearance for data transmission is expected. In three countries, organizational changes impacted the primary care surveillance systems. Re-establishing these sentinel surveillance networks is in progress.

Data for the I-MOVE-COVID-19 surveillance in primary care is collected following a generic protocol. However, there may be differences between countries in the data collected, due to differences in health care systems or coding of data.

- A total of 389 COVID-19 cases were reported by three participating networks in the period March - July. The majority of cases (63%) were reported by Sweden.
- The distribution of cases reflects the course of the pandemic, with most cases reported in March and April, 2020.
- More female COVID-19 cases compared to male cases were reported in the age group 30 to 44 (62%), 45 to 59 years (57%) and 75 years or older (58%). In the age groups 0 to 29 years and 60 to 74 years, the ratio females to males was about 1.
- The age distribution of cases changed over time. In March and April, most cases (resp. 38% and 39%) were 45 to 59 years old, whereas relatively more (42%) younger cases age 0 to 29years were reported in July.
- The most frequently reported symptom was cough (82%), followed by fever (70%) and a sudden onset of symptoms (56%). The least reported symptom was diarrhoea (6%).
- The number of cases reporting a sudden onset decreased over time, from 69% of cases in March to resp. 43%, 27% and 0% in April, May and June-July.
- The most frequently reported symptom in younger age groups (below 45 years) was fever, while cough was the most frequently reported symptom in older age groups. Fever was less frequently (47%) reported in elderly cases (75 years or older) compared to younger cases (67% to 79%).
- The median time between onset of symptoms and testing was 5 days (IQR 5).
- Twenty four percent of cases aged 30 years or older had an underlying chronic condition. This percentage decreased in cases reported over time from 33% in March to 14% in July.
- Most (74%) COVID-19 cases, aged 15 years or older, never smoked.
- Seasonal influenza vaccination was reported for 27% of COVID-19 cases. Among the age groups with an indication for vaccination, the vaccination rate was higher (56%) in female cases compared to

male cases (28%) among the 60-74-year olds, whereas among the 75+ year olds the vaccination rate was higher among male cases (79%) compared to female cases (58%).

- The number of cases with influenza vaccination decreased over time from 32% in March to 29% in April, 20% in May, 5% in June and 0% in July.

2. Enhanced COVID-19 surveillance

2.1. Description of participating networks

Table 1 describes participating networks and their contribution of data to this report. Note that the time period for which data were submitted does not necessarily reflect the total duration of the epidemic in that country. In many countries, dedicated COVID-19 hubs were established for swabbing, impacting on the data collection of virological surveillance carried by sentinel GPs prior to the COVID-19 pandemic. New sentinel data collection systems had to be established rapidly.

In England and Scotland, data collection is in place, but data sharing is awaiting clearance from authorities. The situation is similar in Portugal, where implementation of surveillance in dedicated COVID-19 centers is in progress. In Spain the GP-based sentinel surveillance stopped. In Ireland, sentinel GP virological surveillance was disrupted. For both Spain and Ireland , re-establishment of the sentinel (virological) surveillance is in progress.

Table 1. Description of participating I-MOVE primary care COVID-19 surveillance networks

Network (country)	COVID-19 surveillance in primary care	Coverage or number of participating GP practices	First week of data reporting (first reported case)	Last week of data reporting (last reported case)
RCGP RSC (England)	Yes	~ 100 practices	*Data not yet provided*	
Réseau Sentinelles (France)	Yes	~ 300 practices	Wk 12, 2020 (wk 12, 2020)	Wk 31, 2020 (wk 31, 2020)
Irish GP influenza sentinel surveillance system (Ireland)	Not yet			
Nivel Primary Care Database - Sentinel Practices (Netherlands)	Yes	~ 40 practices	Wk 6, 2020 (wk 10, 2020)	Wk 31, 2020 (wk 22, 2020)
Rede Médicos-Sentinela (Portugal)	Not yet			
GP Sentinel Swabbing Scheme for influenza (Scotland)	Yes		*Data not yet provided*	
cycEVA sentinel network (Spain)	Not yet			
Sentinelövervakning /Sentinel Surveillance Network (Sweden)	Yes	~ 90 practices	Wk 10, 2020 (wk 10, 2020)	Wk 31, 2020 (wk 31, 2020)

COVID-19 sentinel surveillance in the Netherlands and Sweden is based on the systems established for influenza. In France this is the case as well, although substantial changes were implemented since the end of May, when all patients with suspected COVID-19 were eligible for testing. However, 'stay-at-home' policies and video consultation will probably have affected the source population in sentinel surveillance systems, as well as organisational measures such as the establishment of dedicated COVID-19 testing facilities. Table 2 presents some characteristics of the surveillance systems that provided data for this first surveillance report.

In order to avoid duplicate analysis and reporting, we do not disseminate results at site-level, but only on the pooled data. In table 3, web links to site-specific reports have been listed.

Table 2. Main characteristics of I-MOVE primary care COVID-19 surveillance systems*

Network (country)	Case definition**	Testing strategy
Réseau Sentinelles (France)	ARI	Until week 20: systematic sample Since week 21: all patients
Nivel Primary Care Database - Sentinel Practices (Netherlands)	ILI or ARI	Systematic sample
Sentinelövervakning /Sentinel Surveillance Network (Sweden)	ILI or ARI	Systematic sample

* Limited to networks that were able to submit data for the first reporting period.
** ILI = influenza-like illness; ARI = acute respiratory illness

Table 3. Site-specific surveillance websites of participating I-MOVE primary care COVID-19 networks

Network (country)	URL
RCGP RSC (England)	https://www.gov.uk/government/publications/national-covid-19-surveillance-reports
Réseau Sentinelles (France)	https://www.sentiweb.fr/france/en/?page=bulletin
Nivel Primary Care Database - Sentinel Practices (Netherlands)	https://www.nivel.nl/nl/nivel-zorgregistraties-eerste-lijn/actuele-weekcijfers-aandoeningen-waaronder-griep-surveillance
GP Sentinel Swabbing Scheme for influenza (Scotland)	https://beta.isdscotland.org/find-publications-and-data/population-health/covid-19/covid-19-statistical-report/
Sentinelövervakning /Sentinel Surveillance Network (Sweden)	https://www.folkhalsomyndigheten.se/folkhalsorapportering-statistik/statistik-a-o/sjukdomsstatistik/covid-19-veckorapporter/senaste-covidrapporten/

> **NOTE:**
> **All figures in this report are based on data reported by I-MOVE primary care networks from March to July, 2020. Not all data have yet been validated by the partners.**
> **Numbers above bars depict the absolute number of cases.**
> **In this report, all COVID-19 cases are laboratory confirmed.**

2.2. Data on COVID-19 cases

Figure 1 depicts the number of COVID-19 cases, selected for testing in the primary care surveillance networks and with a positive test result.

Table 3 gives an overview of the completeness of the data collection for a selection of the variables listed in the generic protocol. Although certain information may be present for all reporting countries, differences between definitions or coding may hamper the use of this information.
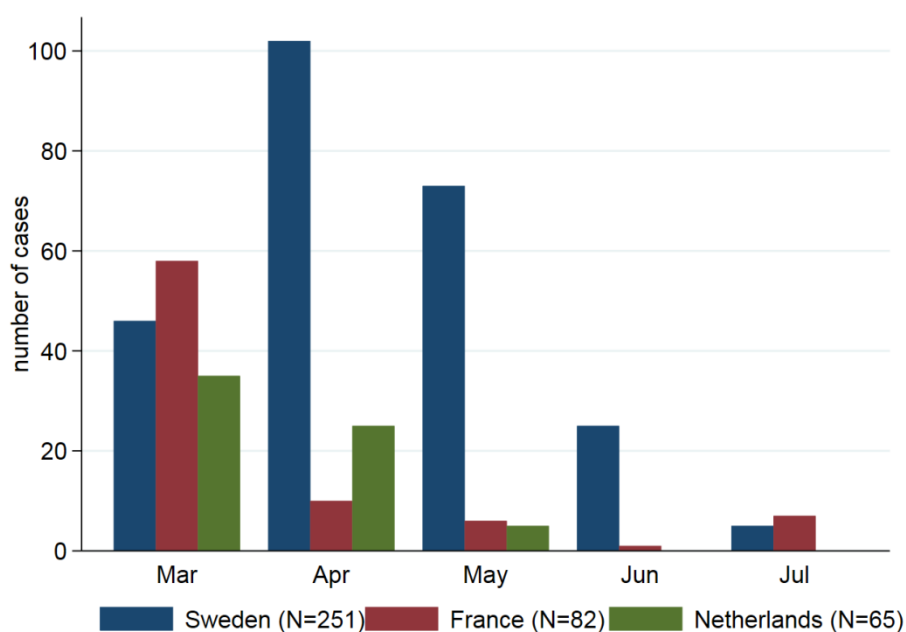
Figure 1. Number of COVID-19 cases reported by I-MOVE primary care networks

Table 4. Completeness of information collected from reported COVID-19 cases for selected variables

Variable	Number of COVID-19 cases*	Number with valid values (percent)	
Age (group)	398	398	(100%)
Sex	396	396	(99%)
Region	79	79	(100%)
Symptoms (any)	147	398	(100%)
Date onset symptoms	398	371	(93%)
Co-infection influenza virus	214	184	(86%)
Referral to hospital	14	14	(100%)
Comorbidity (any, age 30+ yrs)	345	342	(99%)
Obesity	147	143	(97%)
Smoking status	78	66	(85%)
Pregnancy (females, aged 15-45 yrs)	83	26	(31%)
Seasonal influenza vaccination status	398	332	(83%)
Health care worker	14	14	(100%)
Recent travel	65	62	(97%)

* Number of cases selected by networks in which this information was collected.

France:

- Data collection has been adapted since week 21: more information on symptoms and comorbidity, but no longer information on influenza vaccination or influenza virus co-infection.
- Symptoms reported as free text have not yet been included in the analyses.

The Netherlands:
- Data collection is based on I-MOVE influenza protocol.
- Information on hospital referral and being a health care worker is not being collected.

Sweden:
- Specific symptoms were not collected during this reporting period, but will be going forwards.
- Testing for influenza virus was discontinued from week 16, 2020.

2.3.   Demographic characteristics of COVID-19 cases

The age profile of COVID-19 cases presenting to primary care may be younger as they are generally milder cases. Older, more severe cases may not be fully represented in this dataset.
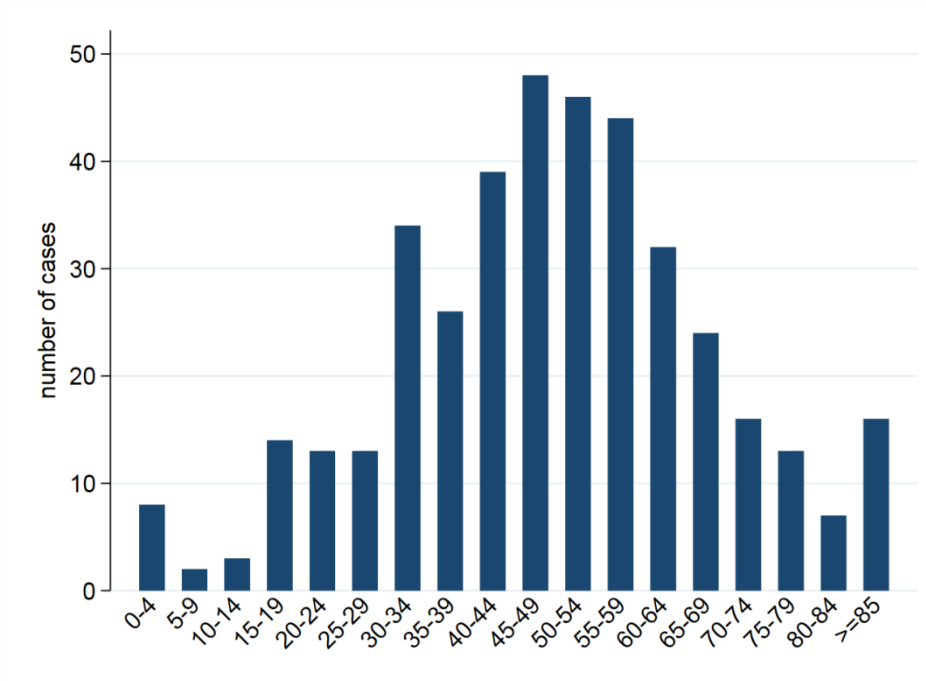
Figure 2. Number of COVID-19 cases, by age group (pooled data, N=398)
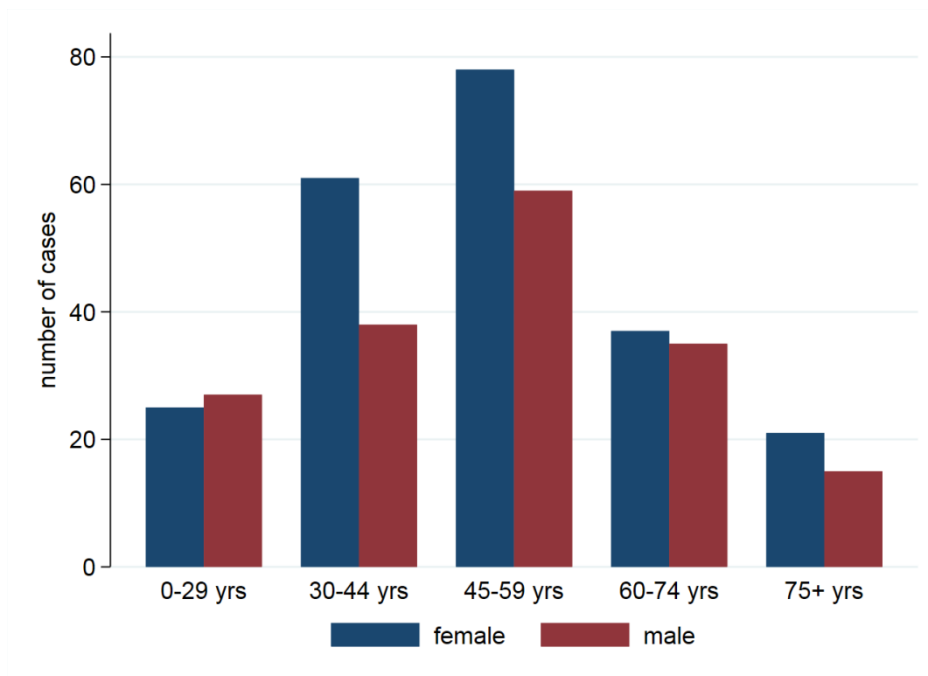
Figure 3. Number of COVID-19 cases, by age group and sex (pooled data, N=396)
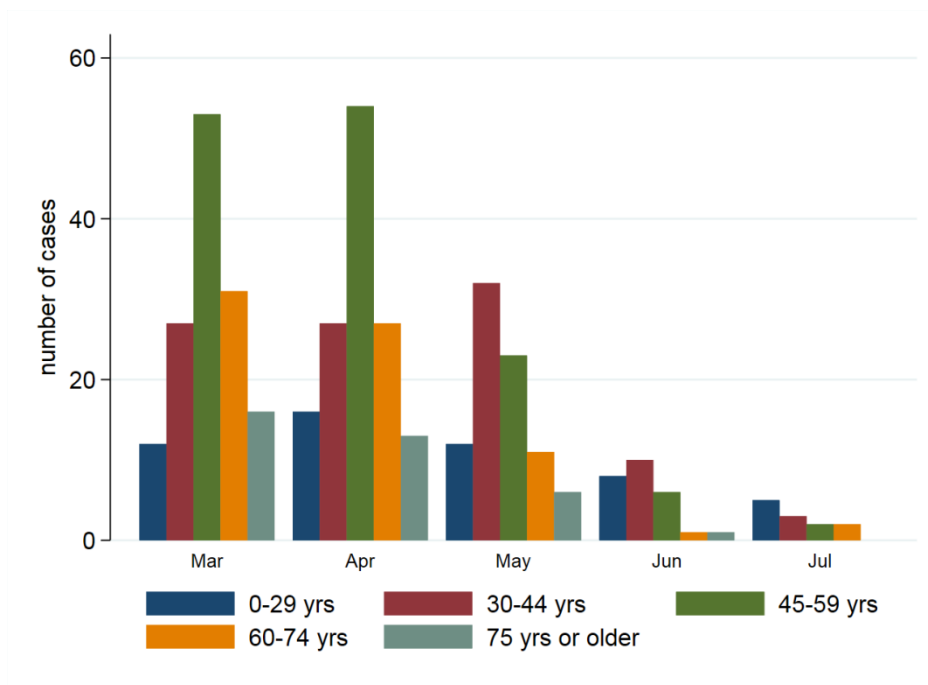

Figure 4. Number of COVID-19 cases, by age group and month (pooled data, N=398)

2.4. Symptoms of COVID-19 cases

Results on symptoms are based on data reported by France and the Netherlands. The reporting of symptoms may be related to the definition of patients eligible for I-MOVE-COVID-19 surveillance by protocol, currently ARI or ILI in France and the Netherlands. Therefore, asymptomatic cases are not expected. The results on 'diarrhoea' are based on a subset of data (N=79 cases) from France since week 21 2020 and from the Netherlands. Results on 'anosmia or ageusia' are currently only collected in France and therefore not reported.
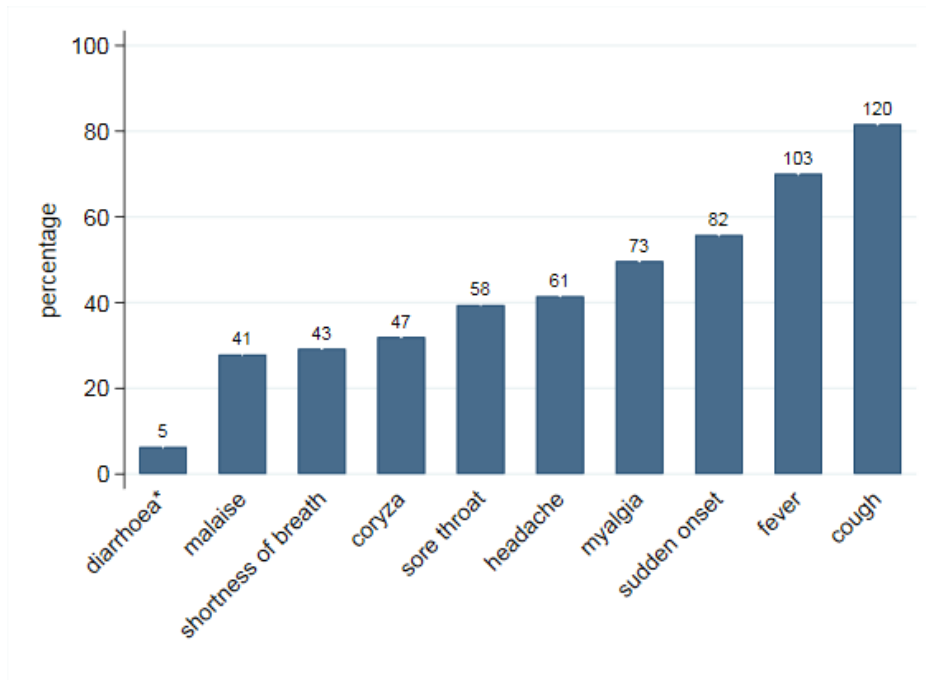
Figure 5. Symptoms reported by COVID-19 cases (pooled data, N=147)

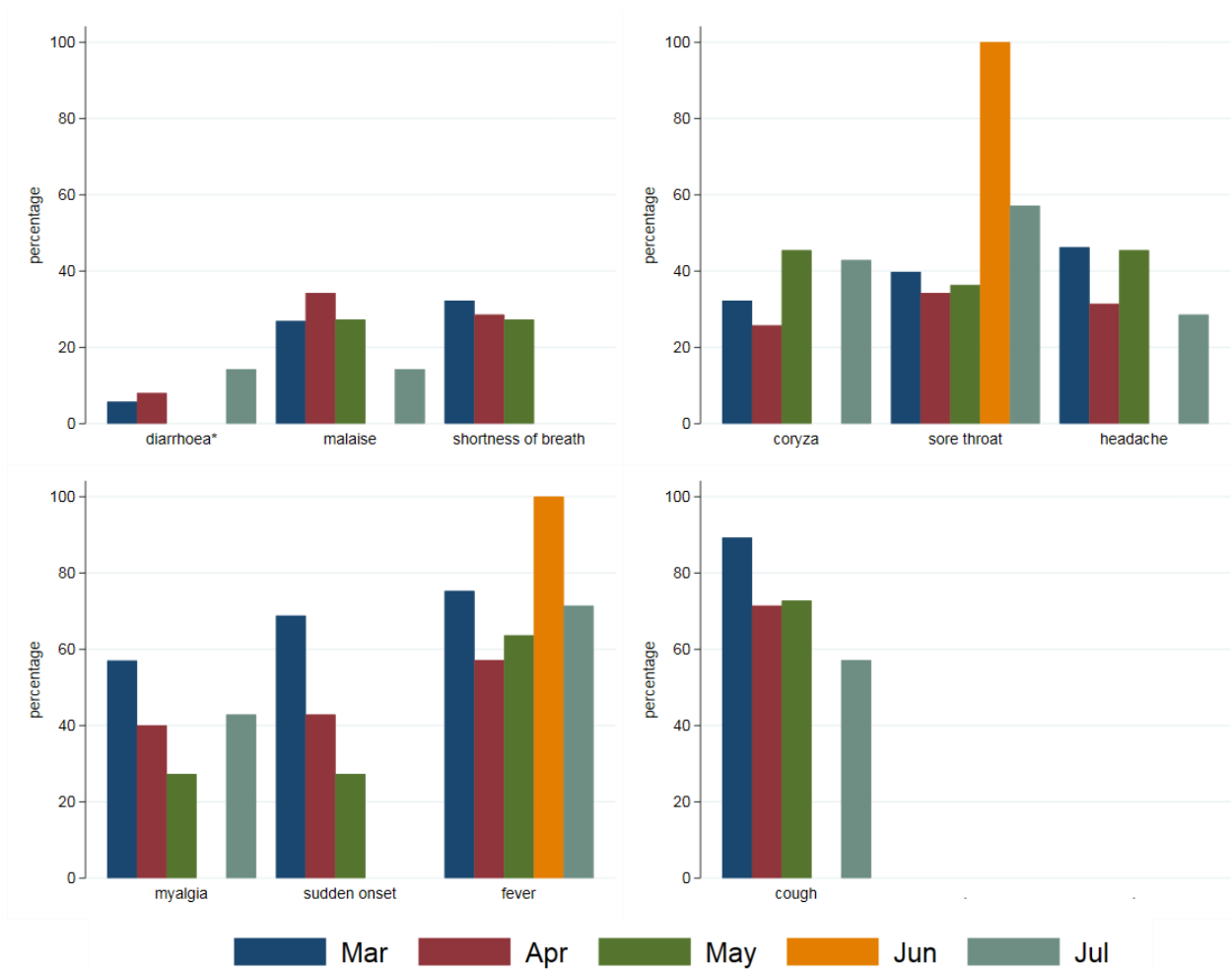* Results for diarrhoea are based on a subset of 79 cases.

Figure 6. Symptoms reported by COVID-19 cases, by month (pooled data, N=147)

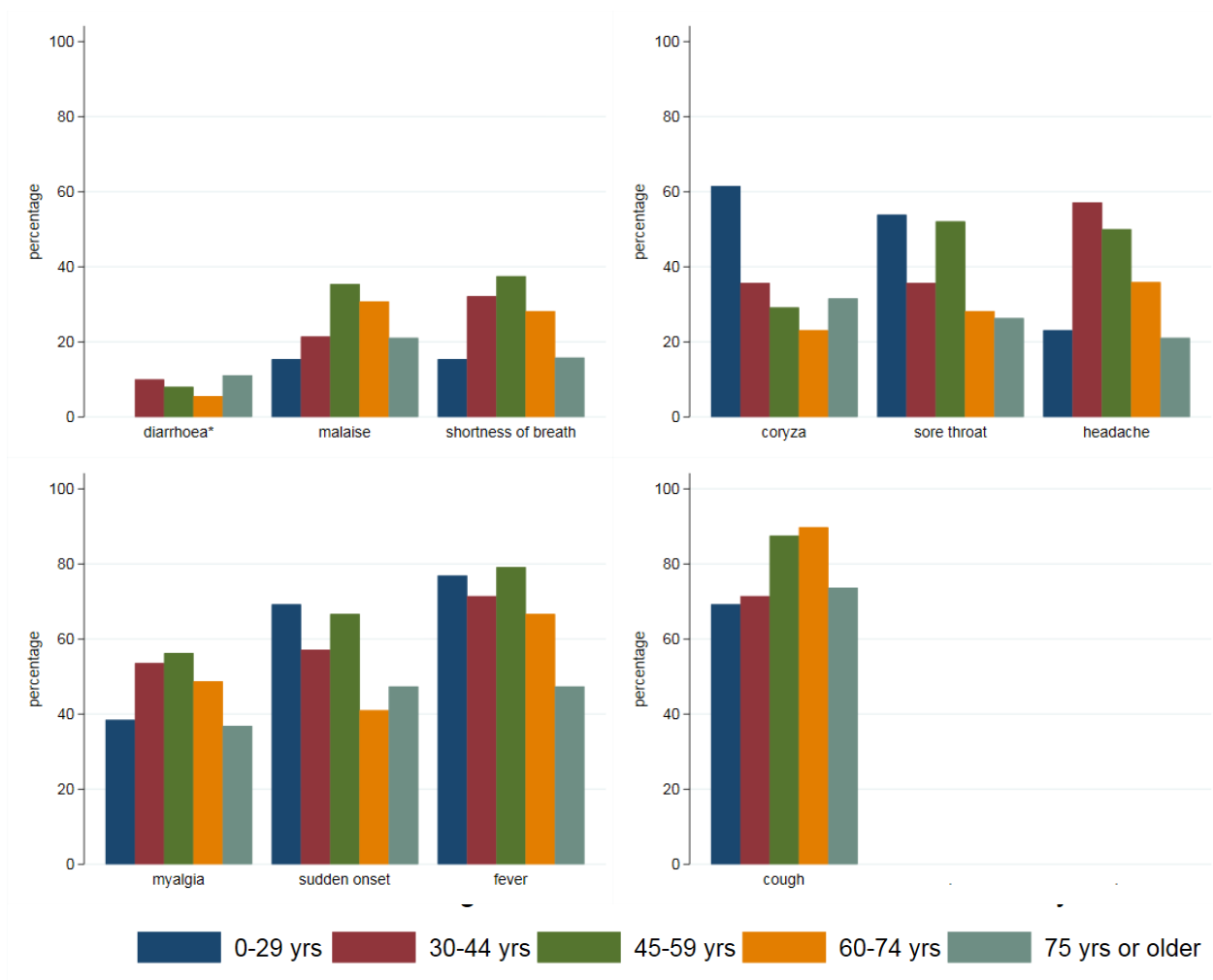* Results for diarrhoea are based on a subset of 79 cases.

Figure 7. Symptoms reported by COVID-19 cases, by age group (pooled data, N=147)

* Results for diarrhoea are based on a subset of 79 cases.
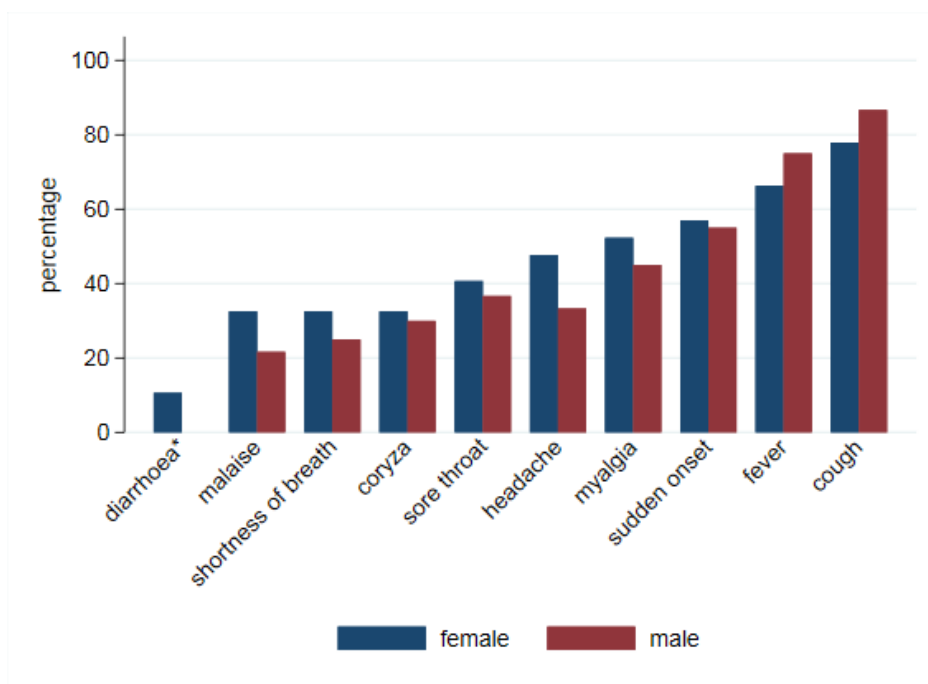
Figure 8. Symptoms reported by COVID-19 cases, by sex (pooled data, N=146)

* Results for diarrhoea are based on a subset of 78 cases.

2.5. Time between onset of symptoms and testing

Table 5. Number of days between onset of symptoms and swabbing (pooled data N=371)

	Number of cases	Median	25th Percentile	75th Percentile
All COVID-19 cases	371	5	3	8
By month				
March	134	4	2	7
April	122	6	3	9
May	82	5	3	8
June	21	5	4	6
July	12	3.5	1.5	5.5
By age group				
0 – 29 yrs	48	4	3	7
30 – 44 yrs	93	5	2	8
45 – 59 yrs	128	5	3	9
60 – 74 yrs	67	6	2	9
75+ yrs	35	3	2	7
By sex				
Female	209	5	2	8
Male	160	5	3	9

2.6. Co-infections of COVID-19 cases

In Sweden and France, no co-infections with influenza virus among COVID-19 cases were reported. Testing for influenza virus was discontinued in Sweden in week 16, 2020 and in France in week 21, 2020. One co-infection with influenza virus was observed in an elderly person (85+ years) in the Netherlands in week 13, 2020.

Only the Netherlands provided data on co-infections with rhinovirus, respiratory syncytial virus (RSV) and enterovirus. Two co-infections with RSV were observed in adults in week 11 and 14, while no co-infections with rhinovirus and enterovirus were observed.

2.7. Referral to hospital of COVID-19 cases

This information was only collected in France, from week 21 onwards. No referral to hospital was reported among 14 COVID-19 cases.

2.8. Underlying (chronic) conditions of COVID-19 cases

Information on liver or renal disease was only used from Sweden. Other chronic diseases was collected as free text in Sweden and France, but this information has not yet been categorised.

No underlying conditions were reported for COVID-19 cases below the age of 30. The results are therefore presented for cases aged 30 years or older.
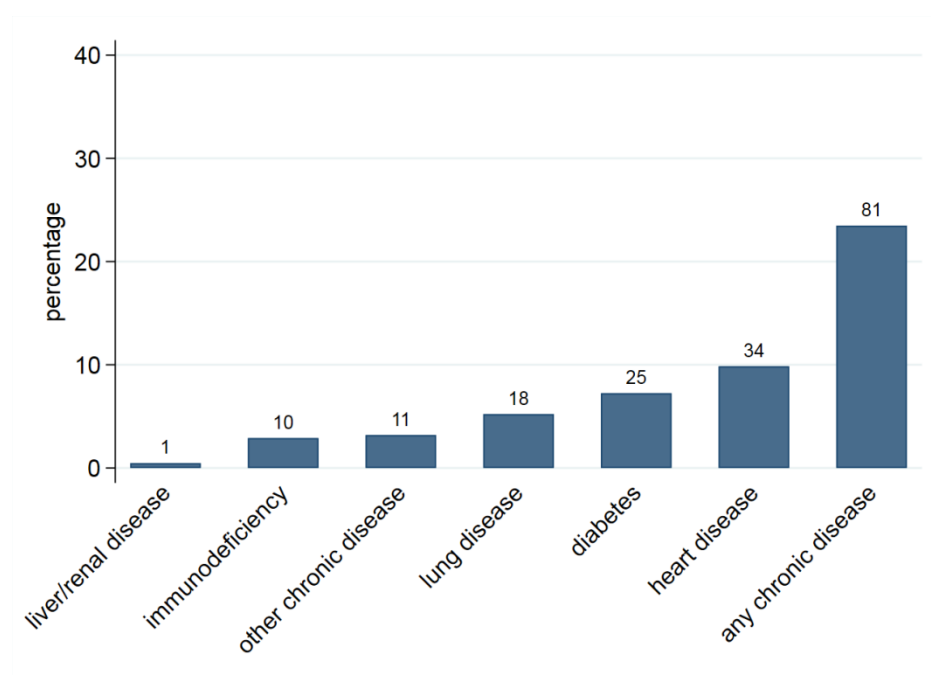

Figure 9. Underlying conditions reported by COVID-19 cases aged 30 years or older (pooled data, N=342 based on the variable 'presence of any chronic condition')
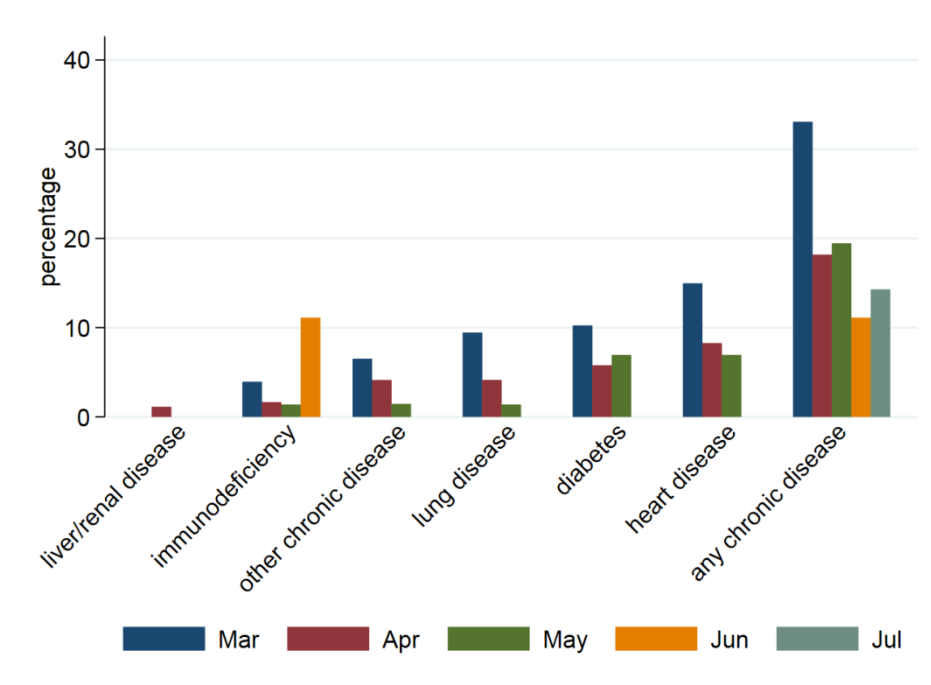
Figure 10. Underlying conditions reported by COVID-19 cases aged 30 years or older, by month (pooled data, N=342 based on the variable 'presence of any chronic condition')
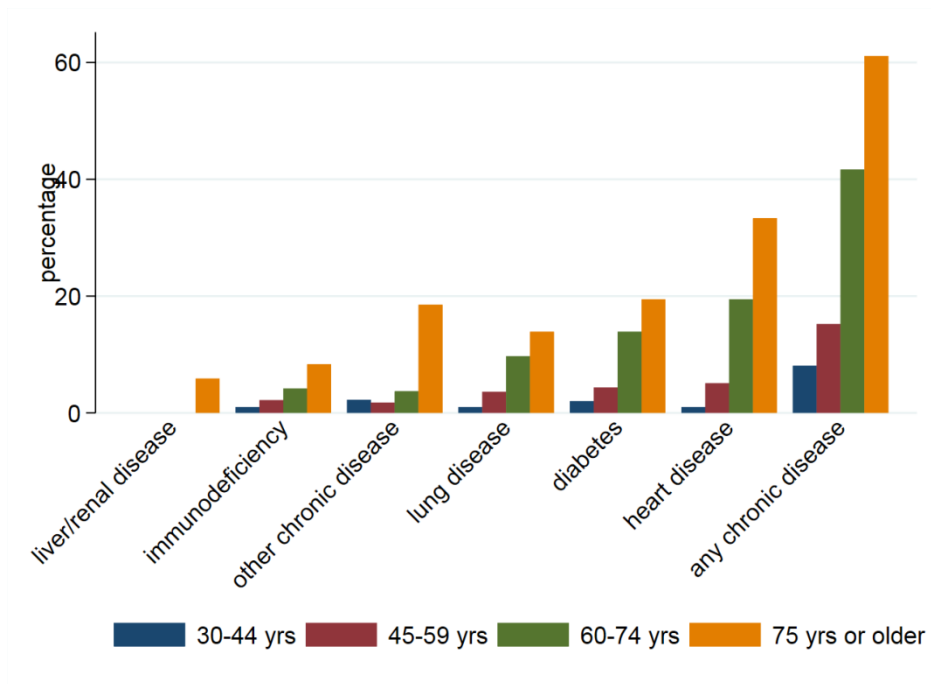

Figure 11. Underlying conditions reported by COVID-19 cases aged 30 years or older, by age group (pooled data, N=342 based on the variable 'presence of any chronic condition')
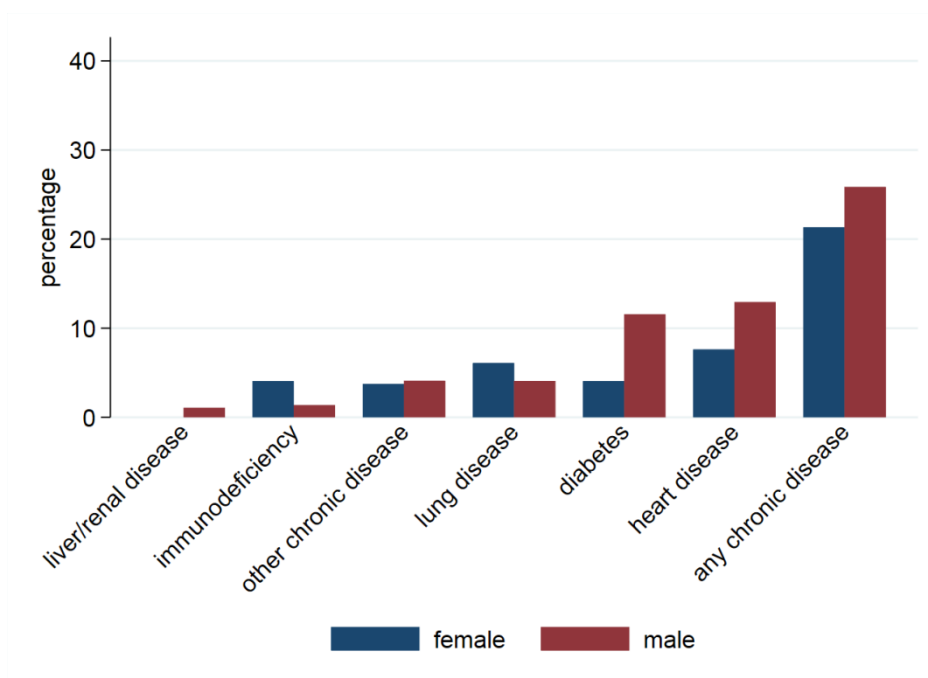
Figure 12. Underlying conditions reported by COVID-19 cases aged 30 years or older, by sex (pooled data, N=341 based on the variable 'presence of any chronic condition')

2.9.   Obesity among COVID-19 cases

Information on obesity was collected in France and the Netherlands. Obese was defined as a Body Mass Index (BMI) of 40 or higher.
A BMI of 40 or more was reported for nine COVID-19 cases (6%).

2.10. Smoking status of COVID-19 cases

The results on smoking status are presented for cases aged 15 years or older. A former smoker ceased smoking more than one year ago.
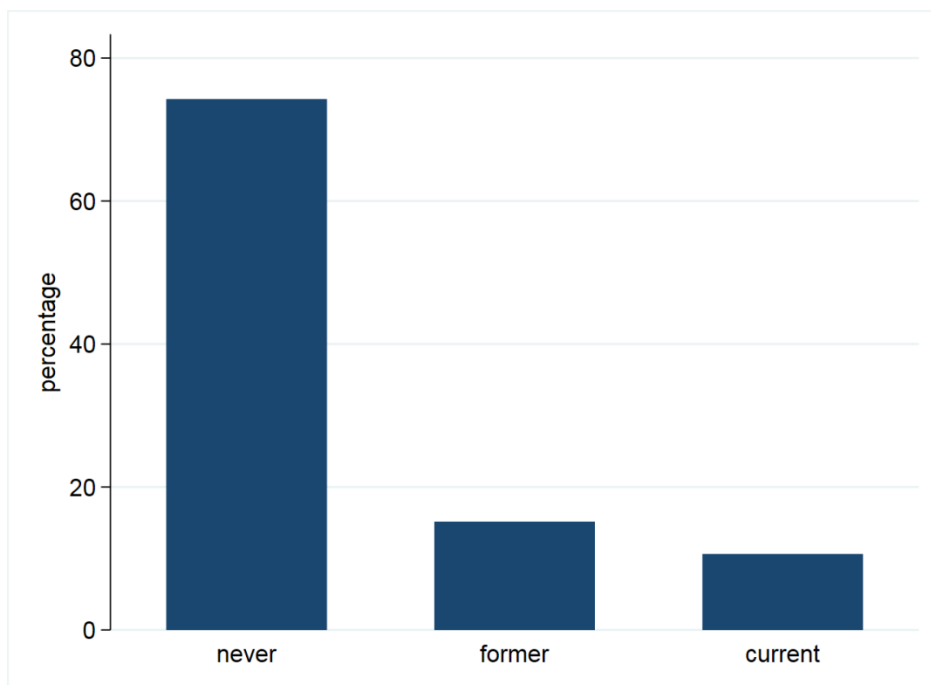
Figure 13. Smoking status of COVID-19 cases aged 15 years or older (pooled data, N=66)
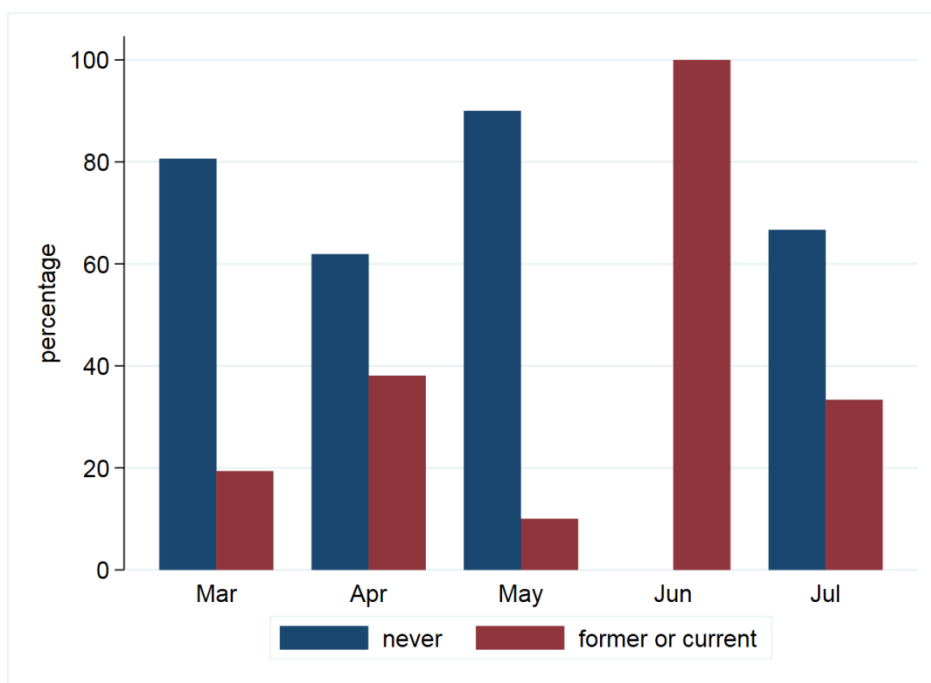

Figure 14. Smoking status of COVID-19 cases aged 15 years or older, by month (pooled data, N=66)
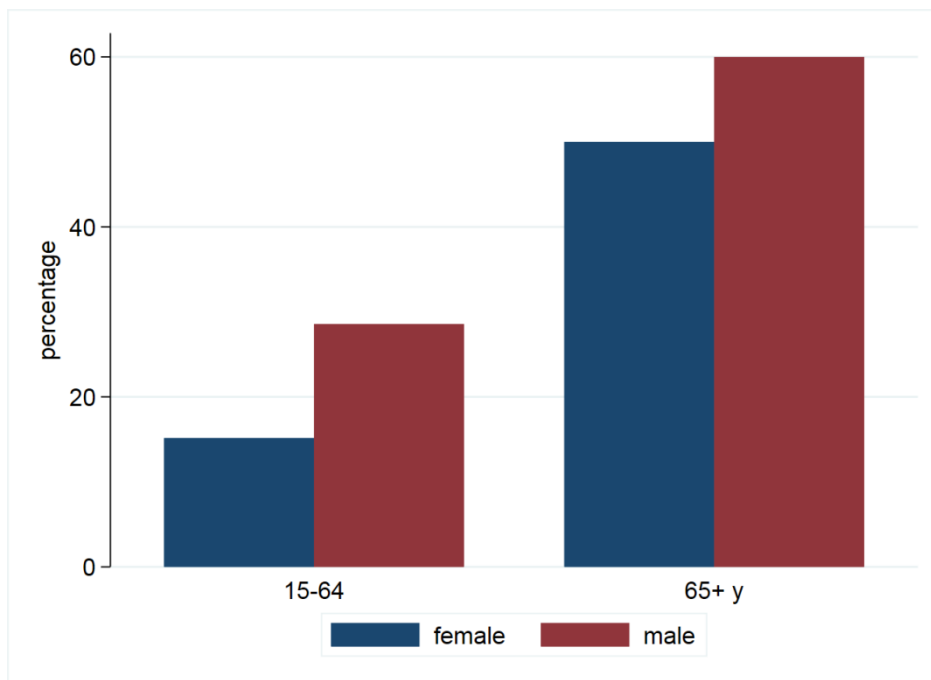
Figure 15. Percentage of former or current smokers among COVID-19 cases aged 15 years or older, by age and sex (pooled data, N=65)

2.11. Pregnancy status of COVID-19 cases

Results on pregnancy are restricted to female cases aged between 15 and 45 years. There was one pregnant COVID-19 case in Sweden and one in the Netherlands.
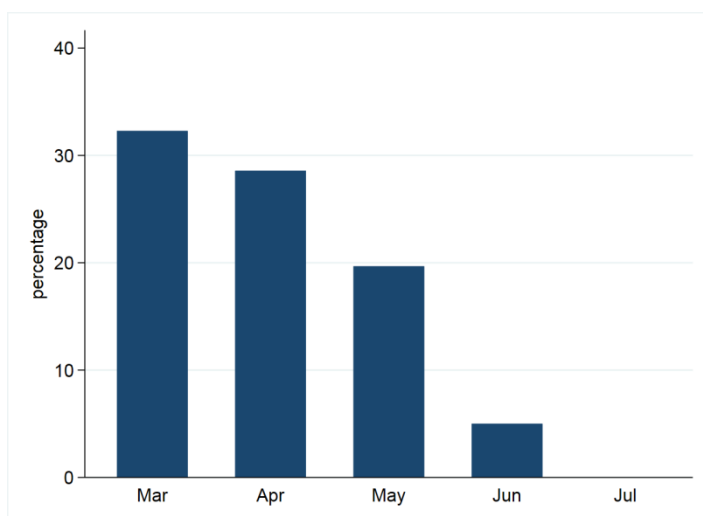
2.12. Influenza vaccination status of COVID-19 cases

Figure 16. Seasonal influenza vaccination of COVID-19 cases, by month (pooled data, N=332)
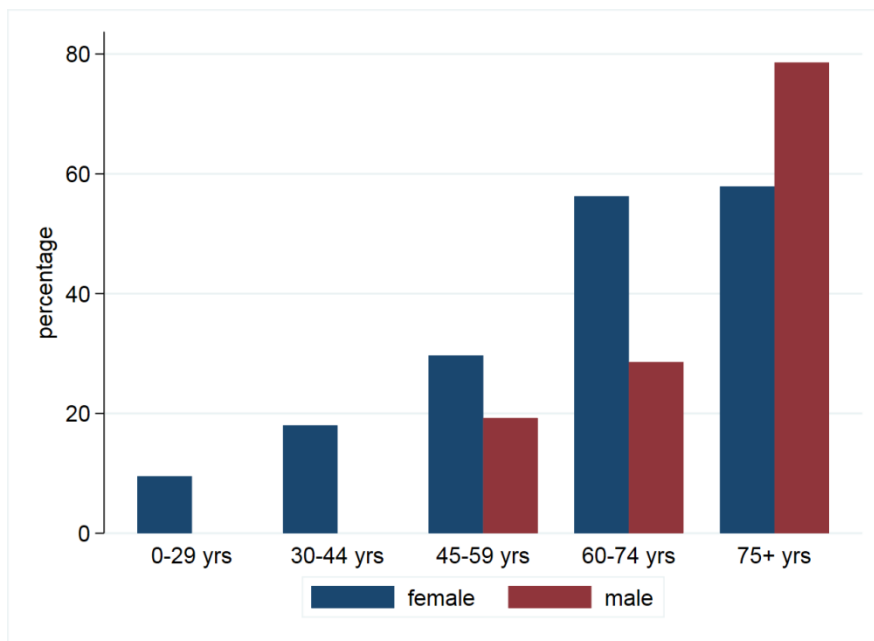
Figure 17. Seasonal influenza vaccination status of COVID-19 cases, by age and sex (pooled data, N=331)

2.13. Health care workers among COVID-19 cases

In France, being a health care worker was added to the questionnaire from week 21 onwards. Among 14 COVID-19 cases, two health care workers were reported.

2.14. Recent travel of COVID-19 cases

Recent travel history was collected in the Netherlands. Recent travel was reported for three of 65 COVID-19 cases.

3. Background

The end of 2019 saw the emergence of a novel severe acute respiratory syndrome – coronavirus 2 (SARS-CoV-2), which causes coronavirus disease 2019 (COVID-19). As of 2 August 2020, 17 841 669 cases of COVID-19 have been reported worldwide, including 685 281 deaths. European Union/European Economic Area (EU/EEA) countries and the United Kingdom (UK) have reported 1 733 550 cases (10% of all cases), including 182 639 deaths (27% of all deaths).[1]

I-MOVE (Influenza – Monitoring Vaccine Effectiveness in Europe), first established in 2007, was the first network to monitor influenza vaccine effectiveness (VE) within and across the seasons in the European Union (EU) and the European Economic Area (EEA). The network has two components, one for primary care practices, recruiting patients with influenza-like illness (ILI) and the other for hospitals, recruiting patients with severe acute respiratory illness (SARI). In February 2020, many partners, already involved in studies within the I-MOVE network, came together as the I-MOVE-COVID-19 consortium, and were successful in a bid for the European Commission H2020 call on "Advancing knowledge for the clinical and public health response to the novel coronavirus epidemic".

The I-MOVE-COVID-19 consortium aims to obtain epidemiological and clinical information on patients with COVID-19 as well as virological information on SARS-CoV-2, through different work packages (WP):
   a) provision of a flexible surveillance platform, adaptable to the epidemiological situation, through WP2 (primary care surveillance) and WP3 (hospital surveillance)
   b) research studies, through WP4, and
   c) evaluation of public health interventions (e.g. vaccination, antivirals) in WP2–4

in order to contribute to the knowledge base, guide patient management, and inform the public health response. This is being achieved through adaptation and expansion of the existing I-MOVE network to include COVID-19. The network includes primary care networks, hospitals, and national laboratory reference centres in 10 countries across the WHO European Region.[2]

The WP2 primary care surveillance for COVID-19 is coordinated by Nivel (Netherlands institute for health services research). The I-MOVE-COVID-19 primary care network comprises nine sentinel surveillance networks in six European Union (EU) Member States (MS)[3] and in England and Scotland. The laboratory component of the network includes regional and national reference centres from the participating countries (in progress). While each of the surveillance sites can analyse their data separately, pooling the data for overall analysis will provide a sample size big enough to answer study questions with reasonable precision.

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[1] ECDC. Rapid Risk Assessment: Coronavirus disease 2019 (COVID-19) in the EU/EEA and the UK – eleventh update: resurgence of cases. ECDC, 10 Aug 2020. https://www.ecdc.europa.eu/en/publications-data/rapid-risk-assessment-coronavirus-disease-2019-covid-19-eueea-and-uk-eleventh
[2] Albania, France, Lithuania, Portugal, Romania, Spain, and the UK (England and Scotland).
[3] France, Ireland, The Netherlands, Portugal, Spain (two sites: the Spanish national system and the Navarra regional system) and Sweden.

In this first surveillance report of COVID-19 in primary care, results are presented from participating primary care COVID-19 surveillance networks up to July 2020. The results add to the ECDC surveillance data collection through TESSy (NCOVAGGR) and reporting (https://www.ecdc.europa.eu/en/covid-19/surveillance/weekly-surveillance-report) by providing more detailed information of COVID-19 cases in primary care.

More details on the data collection for I-MOVE-COVID-19 primary care surveillance can be found in the Generic Protocol.[4]
Briefly, the I-MOVE network is nested in sentinel practices carrying out surveillance for influenza and now COVID-19. Data is being collected from community-dwelling individuals who consult a participating physician with symptoms of suspected COVID-19. From all or from a systematic sample of suspected COVID-19 cases, primary care practitioners collect respiratory specimens as well as information on patient characteristics, and if possible, also on symptoms and potential risk factors and preventive factors for COVID-19. We refer to lab-confirmed SARS-CoV-2 COVID-19 patients as 'COVID-19 cases'.

Participating primary care networks have implemented the generic protocol (or are working on this) in their surveillance setting.

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[4] https://www.imoveflu.org/wp-content/uploads/2020/06/D2.3-I-MOVE-COVID-19-Phased-surveillance-protocol.pdf