

# Symptoms of viral infection and PCR positivity rates of SARS-CoV2 in healthcare professionals in Paris, France

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## Background

On March 10, 2020, the World Health Organization declared a global pandemic of the novel coronavirus SARS-CoV-2. In France, the testing policy in the beginning of the pandemic suggested a restriction to symptomatic persons with risk factors or health care workers (HCW). We report the results of prevalence testing for SARS-CoV-2 and the associated symptoms in HCWs presented with influenza-like illness during the first month at St-Antoine Hospital in Paris

## Materials and methods

We prospectively collected nasopharyngeal swabs from persons attending the outpatient testing unit of StAntoine University Hospital in Paris from February 28, to March 31, 2020. Real-time polymerase chain reaction (RT-PCR) was performed for SARS-CoV-2 and for the most common respiratory pathogens. Patient characteristics, symptoms at presentation, occupation and risk factors were collected. Data were analyzed for normality and descriptive statistics were presented as a number (%) for categorical variables and median (interquartile range; IQR) for continuous variables. Chi-square test was used for categorical variables.

## Results

**823 patients** sought medical care

**623 patients (74.9%)** qualified for testing by RT-PCR, among whom 481 (77.2%) were HCW.

Median (IQR) age – **37 years** (29 – 50). 181 males (29.1%) / 442 females (70.9%)

Table 1. Characteristics and symptoms in patients tested for SARS-CoV-2 in Paris, France, 28 February - 31 March, 2020 (n=623). n/s – not significant

Characteristics	Overall N=623	SARS-CoV2 N=175	Negative N=448	p
Age (years), median (IQR)	37 (29-50)	38 (29-52)	37 (30-49)	n/s
Male, n (%)	181 (29.1)	57 (32.6)	124 (27.7)	n/s
HCW, n (%)	481 (77.2)	145 (82.9)	336 (75.0)	<0.05
Comorbidities, n (%)	164 (26.3)	42 (24.0)	122 (27.2)	n/s
Days from the onset, median (IQR)	3 (2-4)	3 (2-4)	3 (2-5)	n/s
Fever, n (%)	392 (62.9)	138 (78.9)	254 (56.7)	<0.00001
Cough, n (%)	430 (69.0)	124 (70.9)	306 (68.3)	n/s
Productive cough, n (%)	31 (5.0)	10 (5.7)	21 (4.7)	n/s
Sore throat, n (%)	105 (16.9)	19 (10.9)	86 (19.2)	<0.05
Rhinorrhea, n (%)	211 (33.9)	55 (31.4)	156 (34.8)	n/s
Nasal congestion, n (%)	204 (32.7)	55 (31.4)	149 (33.3)	n/s
Dyspnea, n (%)	41 (6.6)	10 (5.7)	31 (6.9)	n/s
Anosmia, n (%)	76 (12.2)	46 (26.3)	30 (6.7)	<0.00001
Chest pain, n (%)	48 (7.7)	12 (6.9)	36 (8.0)	n/s
Headache, n (%)	221 (35.5)	79 (45.1)	142 (31.7)	<0.01
Chills, n (%)	174 (27.9)	58 (33.1)	116 (25.9)	n/s
Vomiting, n (%)	14 (2.2)	3 (1.7)	11 (2.5)	n/s
Nausea, n (%)	25 (4.0)	7 (4.0)	18 (4.1)	n/s
Diarrhea, n (%)	52 (8.3)	15 (8.6)	37 (8.3)	n/s
Myalgia, n (%)	223 (35.8)	82 (46.9)	141 (31.5)	<0.01
Arthralgia, n (%)	189 (30.3)	62 (35.4)	127 (28.3)	n/s
Anorexia, n (%)	21 (3.4)	4 (2.3)	17 (3.8)	n/s
Fatigue, n (%)	121 (19.4)	33 (18.9)	88 (19.6)	n/s
Aphonia, n (%)	5 (0.8)	1 (0.6)	4 (0.9)	n/s
Abdominal pain, n (%)	15 (2.4)	3 (1.7)	12 (2.7)	n/s
Sweats, n (%)	22 (3.5)	5 (2.9)	17 (3.8)	n/s
Vertigo, n (%)	9 (1.4)	3 (1.7)	6 (1.3)	n/s

The overall prevalence of SARS-CoV2 was 28.1%. Among patients with negative SAS-CoV2 PCR, 37 (4.5%) were carriers of another respiratory virus, mainly influenza virus (35%). Compared to other patients, HCWs had higher prevalence of SARS-CoV2 (30.1% vs. 21.1%, p<0.04).

The median (IQR) onset of symptoms before the test was 3 (2–4) days in patients with COVID-19.

Fever and cough were noted in 138 (78.9%) and 124 (70.9%) patients respectively while anosmia, fever, myalgia and headache were significantly more common in patients with SARS-CoV2 infection (26.3% vs. 6.7%, 78.9% vs. 56.7%, 46.9% vs. 31.5% and 45.1% vs.31.7% respectively) (Table 1).

## Conclusion

At the very beginning of the COVID-19 epidemic in France, the overall prevalence of SARS-CoV2 positivity in a hospital screening center in Paris was 30.1% among HCW who sought medical care for influenza-like illness, which highlights the importance of screening of health care professionals for SARS-CoV2 during an epidemic period.