Response to Covid-19 pandemics in Cameroon
First three months activity (1st March to 5th June 2020)
Source: Placard, CPC

Clinical characteristics of Covid-19 suspected cases at the time of laboratory testing

From1st March to 5 June 2020,**33 891 signals** were registered at different Covid-19 referral laboratories. Among them, **33 465**validated samples collected from the nasal and/or pharynx regions of **31 608 individuals** were tested using PCR (Figure 1).

- A total of **8 057 (26%)** individuals were tested positive. Among them, **95** corresponded to individuals whose sample were collected after death (n=226) fora**positivity rate of42%**
    - Only **1 173 (14.6%)** were tested more than once.
- The positivity rate varied according to region of sample collection (**Table 1**)

Table 1: Covid19 positivity rates according to region, collection of data started

	COVID - 19					
	Suspected cases		Covid-19 Positive cases		Data Collection	
	N=31608	(%)*	n = 8057	(26%)**	Start on	First case identification
Regions						
Adamawa	90	0.3	24	(26.7)	23/03	10/04
Centre	21 744	68.8	5515	(25.4)	15/02	05/03
East	1 758	5.6	522	(29.7)	29/03	08/04
Far North	202	0.6	47	(23.3)	26/03	07/04
Littoral	2 606	8.2	716	(27.5)	04/03	17/03
North	536	1.7	109	(20.3)	24/03	24/04
North West	619	2.0	169	(27.3)	24/03	19/04
South	960	3.0	321	(33.4)	14/03	31/03
South West	963	3.1	302	(31.4)	24/03	26/03
West	2130	6.7	332	(15.6)	08/03	17/03

*(Ni/N)**(ni/Ni) Ni: suspected cases tested per regions; N: total number of suspected cases; ni=number of positive cases per region

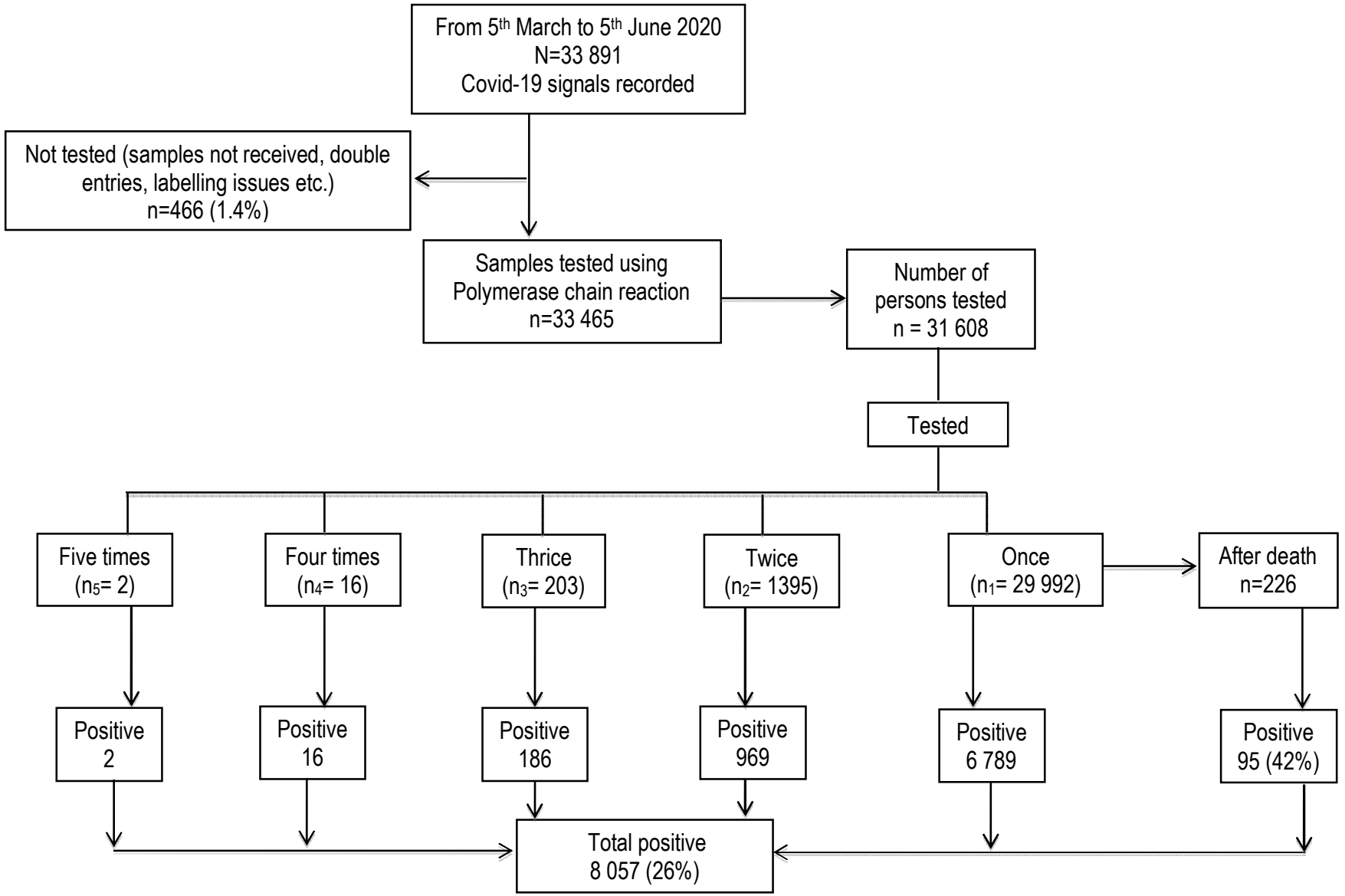

Figure 1: Covid-19 molecular tests conducted during the first three months of the epidemic, 1st March to 5th June 2020, Cameroon

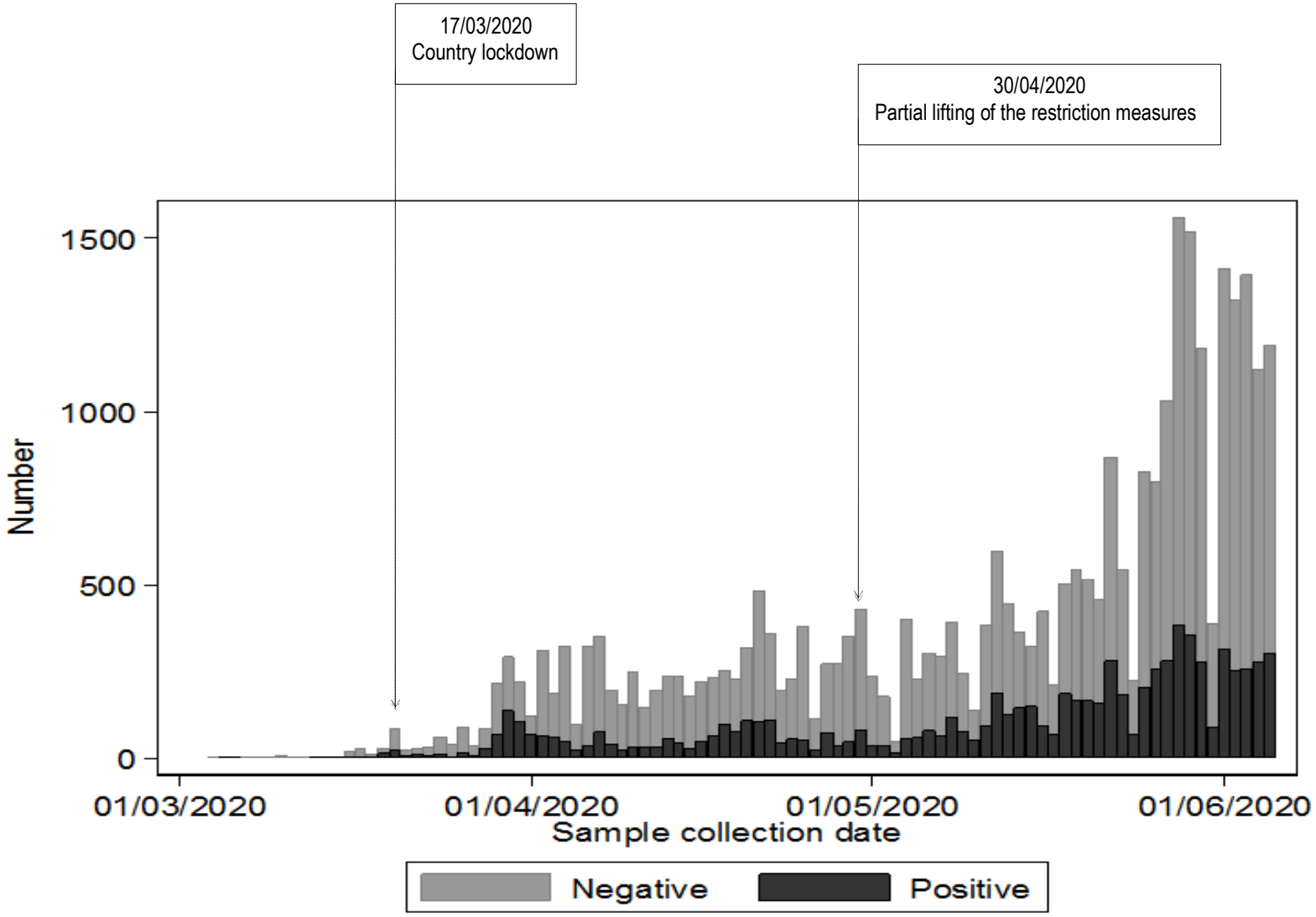

Figure 2: Covid-19 epidemic curve in Cameroon, March – June 2020

The respective spike on the epi curve are getting higher and higher especially after the lifting of the restriction measures indicating that the epidemic is progressing.

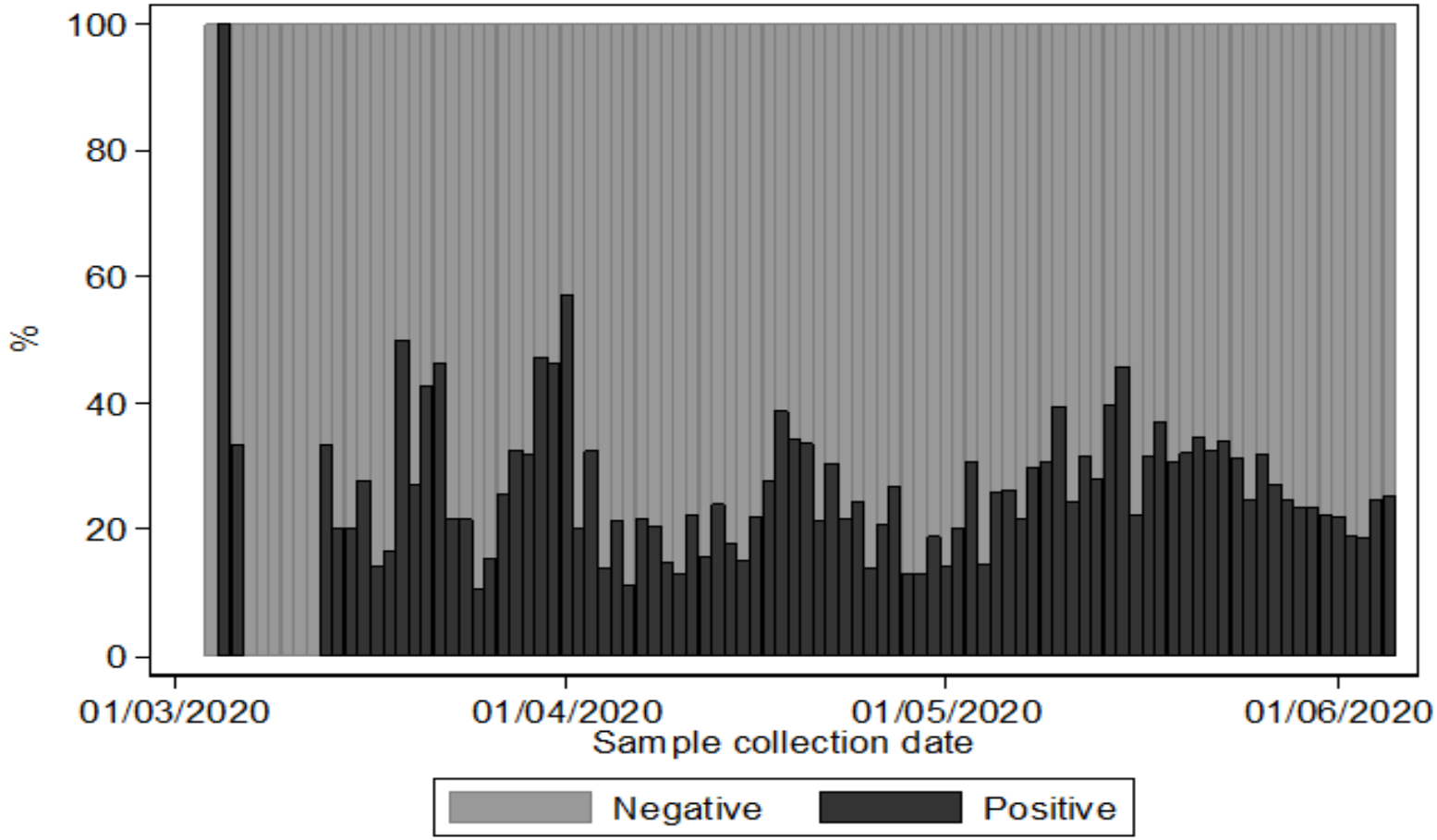

Figure 3: Covid-19 positivity rate during the studied period, March – June 2020, Cameroon

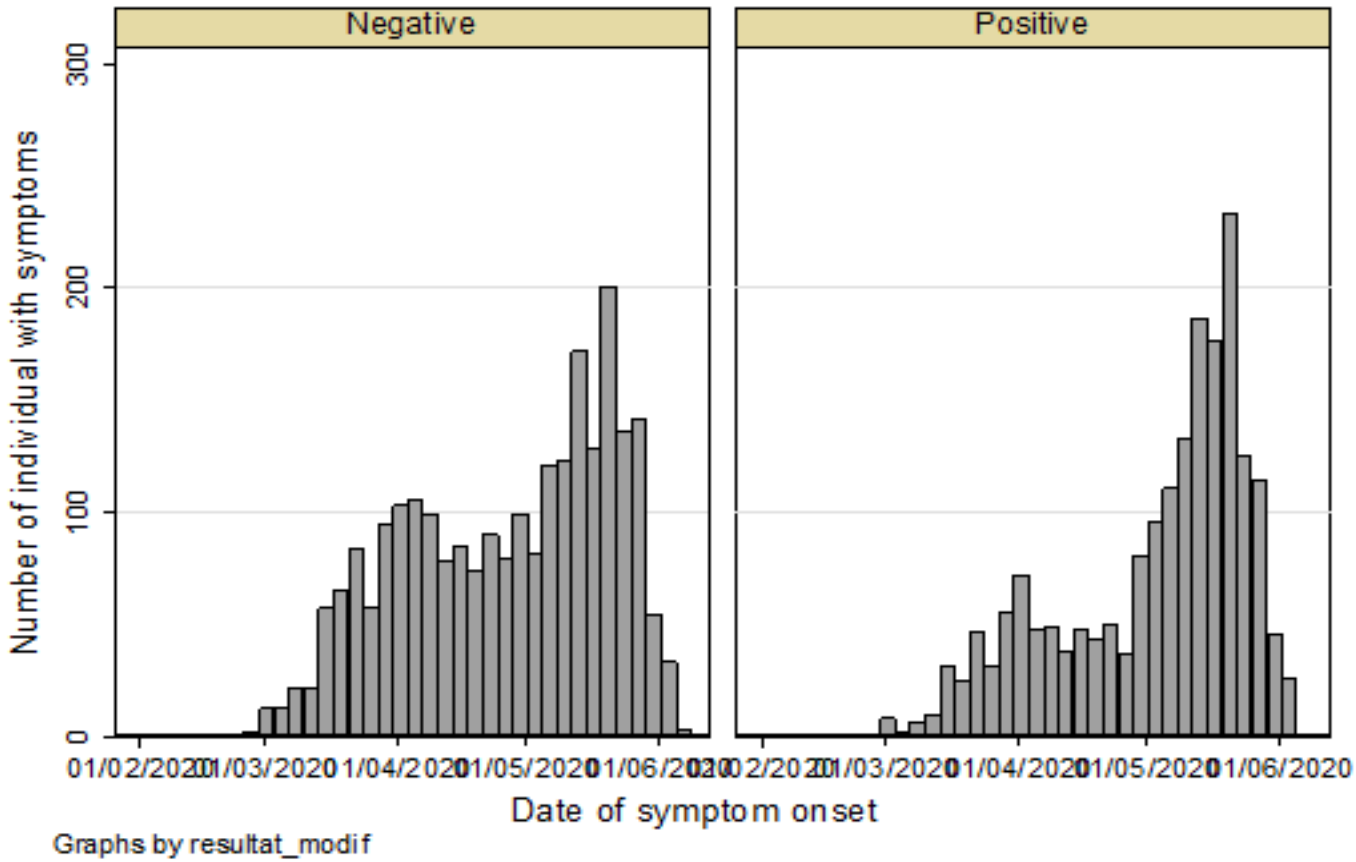

Figure 4: Timeline of symptoms onset during the studied period among positive and negative covid-19 cases

Among those non infected by the SARS-CoV-2, the presence of symptomatic cases is an indication that other respiratory viruses were circulating in the community at the same period

Table 2: Clinical characteristics of participants, 1st March to 5th June 2020, Cameroon

Characteristics	All participants N=31608	COVID-19 infection Yes (n=8 057)	No (n=23551)	
Period of diagnosis				<0.001
March	1 314 (4.2)	449 (5.7)	865 (3.7)	
April	7 477 (24.1)	1 652 (20.8)	5 825 (25.1)	
May	15 942 (51.3)	4 457 (56.1)	11 485 (49.7)	
June	6 346 (20.4)	1388 (17.5)	4 958 (21.4)	
Age	27 959*	7 081	20 878	
Median (IQR) - year	37.4 (29.4-47.4)	38.4 (30.2 – 49.4)	36.9 (29.4 – 47.0)	<0.001
Distribution – n/total (%)				
0-14	1 223 (4.4)	**192 (2.7)**	1 031 (4.9)	
15-49	20 964 (75.0)	5 197 (73.4)	15 767 (75.5)	
50-64	4 533 (16.2)	1 257 (17.8)	3 276(15.7)	
≥65	1 239(4.4)	435(6.1)	804 (3.9)	
Gender	31103*	7 938	23 165	<0.001
Female	12 846 (41.3)	3 121 (39.3)	9 725 (42.0)	
Male	18257 (58.7)	**4 817 (60.7)**	13440 (58.0)	
Coexisting disorders - n (%)				
Any	2 109 (6.7)	**733 (9.1)**	1376 (5.8)	<0.001
Diabetes	676 (2.1)	282 (3.5)	394 (1.7)	<0.001
Chronic renal disease	154 (0.5)	51 (0.6)	103 (0.4)	<0.001
Cardiovascular	984 (3.1)	353 (4.4)	631 (2.7)	<0.001
Immunosuppression	241 (0.8)	70 (0.9)	171 (0.7)	<0.001
Asthma	499 (1.6)	139 (1.7)	360 (1.5)	<0.001
Drug history at sample collection - n (%)				
Antiviral	370 (1.2)	142 (1.8)	228 (1.0)	<0.001
Antibiotics	3 164 (10.0)	1 434 (17.8)	1 730 (7.4)	<0.001
Antimalarial	3 370 (10.7)	1 617 (20.1)	1 753 (7.4)	<0.001
Antipyretic	4 262(13.5)	**1 971 (24.5)**	2 291 (9.7)	<0.001

*The denominators of patients who were included in the analysis are provided if they differed from the overall numbers in the group

The median age of participants tested was 37.4 years (29.4 - 47.4) with participants of 15 – 49 years age group predominantly represented. Children and adolescents represented 2.7% of infected participants (one-third respectively in the following age group: <5 years, 5-10 years, and 10-15 years). Male participants were significantly more infected than female. Covid-19 participants have significantly more coexisting disorders than non-infected suggesting that they might be at higher risk for infection (Table 2).

Table 3: clinical characteristic of suspected Covid-19 cases, 1st March to 5th June 2020, Cameroon

Characteristics	All participants (N=31608)	COVID-19 infection Yes (n=8 057)	No (n = 23551)	p
Symptoms – n (%)				
No	20452 (64.7)	**3 609 (44.8)**	16 843 (71.5)	<0.001
Any	11 156 (35.3)	4 448 (55.2)	6 708 (28.5)	
	***4 371**	**1 930**	**2 441**	
Time from symptomonset to sample collection, median (IQR; days)	6 (3 - 9)	6 (3-9)	6 (3-10)	<0.001
Cough	6410 (20.3)	**2 973 (36.9)**	3437 (14.6)	<0.001
Headache	5 509 (17.4)	**2 309 (28.7)**	3 200 (13.6)	<0.001
Fatigue/malaise	4476 (14.5)	**2115 (26.3)**	2361 (10.0)	<0.001
Shortness of breath	3315 (10.5)	**1443 (17.9)**	1872 (8.0)	<0.001
Myalgia (muscles ache) or arthralgia	2631(8.3)	**1 239 (15.4)**	1392(5.9)	<0.001
Sore throat	2480 (7.9)	942 (11.7)	1538 (6.5)	<0.001
Rhinorrhoea (runny nose)	1923(6.1)	780 (9.7)	1143 (4.9)	<0.001
Diarrhoea	1285(4.1)	561(7.0)	724 (3.1)	<0.001
Fever at sample collection / history of fever few days ago	1 006(3.2)	490(6.1)	516 (2.2)	<0.001
Nausea and vomiting	784(2.5)	372 (4.6)	412 (1.8)	<0.001
Conjunctival congestion	561(1.8)	252 (3.1)	309 (1.3)	<0.001
Aguesia and/or anosmia	576 (1.8)	358(4.4)	218 (0.9)	<0.001
Anosmia (loss of taste)	502(1.6)	319 (4.0)	183 (0.8)	0.001
Agueusia(loss of smell)	286(0.9)	174 (2.2)	112 (0.5)	<0.001
Ear pain	150 (0.5)	55 (0.7)	95 (0.4)	<0.001
Other symptoms or signs				
Skin rash	420 (1.3)	157 (2.0)	263 (1.1)	<0.001
Abdominal pain	158 (0.6)	44 (0.6)	114 (0.5)	0.5
Chest pain	154 (0.5)	44 (0.6)	110 (0.5)	0.4
Inappetence	72 (0.2)	42 (0.5)	30 (0.1)	<0.001
Dizziness	36 (0.1)	13 (0.2)	23 (0.1)	0.1
Constipation	14 (0.05)	5 (0.06)	9 (0.04)	0.4
Lombar pain	9 (0.03)	3 (0.04)	6 (0.03)	06

If the suspected case's record did not include information on a clinical characteristic, it was assumed that the characteristic was not present.
*The denominators of patients who were included in the analysis are provided if they differed from the overall numbers in the group

Covid-19 cases appeared to be more symptomatic than non Covid-19 cases. The median duration from symptom onset to sample collection was 6 days (IQR 3 – 9). We found that two-fifth of SARS-CoV-2 infected participants did not report any symptom and were considered asymptomatic at sample collection. Among Covid-19 cases, cough (36.9%) was the most common symptom, followed by headache (28.7%), fatigue/malaise (26.3%), shortness of breath (17.9%), and

myalgia/arthralgia (15.4%)(Table 3). Fever was noted in only 490(6.1%) individuals. But, it is important to indicate that more than 24% of individuals have taken antipyretic as shown in Table 2. Gastrointestinal signs (diarrhoea, nausea and vomiting, inappetence) were observed but not predominant. Loss or change of sense of smell (anosmia) or taste (aguesia) was observed in less than 2% of tested participants but significantly present in SARS-CoV-2 infected participants than non-infected participants (4.4% vs 0.9%, p<0.001) (Table 3).

Characteristics of asymptomatic Covid-19 cases

Table 4: characteristic associated to asymptomatic Covid-19 cases, 1st March to 5th June 2020, Cameroon (univariate analysis)

	Asymptomatic Covid-19 cases			
	N	**n (%)**	**OR (95%CI)***	**p**
Age group (years)				<0.001
<15	192	123 (64.1)	3.42 (2.36 – 4.95)	
15 - 49	5197	2 413 (46.4)	1.66 (1.35 – 2.04)	
50 - 64	1257	457 (36.4)	1.10 (0.87 – 1.38)	
>=65	435	149 (34.3)	1	
Gender				<0.001
Male	4 817	2 257 (46.9)	1.25 (1.14 – 1.37)	
Female	3 121	1 289 (41.3)	1	
Presence of any co-morbidity				<0.001
No	7 327	3 462 (47.3)	3.57 (2.96 – 4.32)	
Yes	733	147 (20.1)	1	
Period of diagnosis				<0.001
March	449	253 (56.4)	2.10 (1.69 – 2.59)	
June	1 388	750 (54.0)	1.90 (1.64 – 2.20)	
May	4 457	1911 (42.9)	1.21 (1.10 – 1.36)	
April	1 652	631 (38.2)	1	

*95%CI: Confidence interval

As presented in Table 4,participants aged less than 50 years, male gender, and participants with no co-morbidity are likely to be asymptomatic

Viral shedding

Table 5: duration of viral shedding at nasopharyngeal sites according to different criteria, 1st March – 5th June 2020, Cameroon

		Duration of viral shedding (days)	
Criteria	**n**	**Median (IQR)**	**Range**
From first Covid-19 positive PCR to the negative PCR result	973	15 (13 – 18)	1 - 62
From the symptoms onset to the negative PCR result	284	21 (17 – 26)	10 - 75
From first Covid-19 positive PCR to the last positive PCR*	298	14 (11 – 20)	1 - 61
From the symptoms onset to the last positive PCR*	79	17 (13 – 24)	5 - 41

*Last positive PCR: represents in the context of the follow-up of ta case, the positive PCR test obtained before the negative PCR result

Based on this Table 5, we observed that the median duration of viral shedding for symptomatic participants is between 17 to 21 days

Keys points

- Half of suspected Covid-19 deaths tested using PCR are positive
- Few positive Covid-19 participants were retested during the first three months of activity
- The epidemic is still progressing
- All age group are concerned but participants aged 15-49 years are predominantly represented
- Sex ratio Female : Male of Covid-19 positive participants is 2/3. Male participants are significantly more infected than female
- Participants with any co-existing disorders might be more susceptible to SARS-CoV-2 infection
- 45% (95%CI44 – 46) of Covid-19 positive participants were asymptomatic at time of sample collection for diagnosis. This status is associated to age<50 years, male gender, no co-morbidity, and period of diagnosis
- The following symptoms are the most frequent. In order: cough, headache, fatigue/malaise, shortness of breath, and myalgia/arthralgia.
- Half of Covid-19 positive participants shed virus more than three weeks from symptoms onset