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Original article

# Impact of the SARS-CoV-2 epidemic on private ENT consulting practice during the first month of lockdown in Réunion Island in 2020



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## ABSTRACT

**Objective:** To analyze the impact of the first month of lockdown related to the 2020 SARS-Cov-2 epidemic on the consulting activity of private ENT physicians in Réunion Island.

**Material and methods:** A multicenter prospective study analyzed the consulting activity of 12 ENT physicians in full-time private practice. The main endpoints were the number, characteristics and conditions of consultations. Secondary endpoints comprised presenting symptoms, diagnosis, prescriptions, adverse effects, and progression of monthly consulting turnover.

**Results:** Six hundred and ninety three consultations were performed during the study period ([Appendix 1](#)), with 50% emergency consultations. In 57.9% were face-to-face, 28.4% by phone and 13.7% video. In face-to-face consultation, the physician wore gloves in 53.8% of cases and a mask in 92.2%: surgical mask in 71.6% of cases and FFP2 in 28.4%. The three most frequent symptoms (48.5% of cases) were otalgia, hearing impairment, and vertigo. The three most frequent diagnoses (60.6% of cases) were otitis, intra-auricular foreign body (including wax), and pharyngeal infection. The three most frequently prescribed complementary exams (74.3% of cases) were imaging, hearing work-up, and specialist opinion. The three most frequently prescribed treatments (52.7% of cases) were intra-auricular drops, oral antibiotics, and nasal spray. The incidence of adverse effects was 0.001%. None of the physicians or patients seemed to have been infected by Covid-19 during the study period. There was a 47.3–91% (median, 75.6%) drop in monthly consultation turnover.

**Conclusion:** The present study underscored the availability and adaptability of ENT physicians in the Réunion Island in an epidemic context, although economic impact was detrimental.

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## 1. Introduction

On Wednesday March 11, 2020, the first case of SARS-CoV-2 infection was diagnosed in Réunion Island, a French overseas administrative Department [1]. To combat the epidemic, lockdown was implemented on March 17, and on March 22 the French ENT Society (SFORL) published guidelines on the indications and modalities of ENT consultation during lockdown (<https://www.sforl.org/>), completed by good practice recommendations [2–6].

The present article assesses the impact of these measures on consultation activity in community ENT offices in Réunion Island during the first month of lockdown. Secondary endpoints comprised presenting symptoms, diagnoses, prescriptions, adverse effects, and progression in consultation turnover.

## 2. Material and method

All 23 ENT specialists working fulltime in community offices or ENT medical centers in Réunion Island at the beginning of lockdown on March 17, 2020 were contacted. Six were excluded: 1 not exercising, 3 doing part-time replacements, 1 on maternity leave and 1 on sick leave. Twelve of the remaining 17 (70.5%: 10 men, 2 women; age, 33–67 years) agreed to take part. No review-board

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assessment was sought as this observational study did not come under the legislation governing human research in France [7].

The main objective of this multicenter prospective study was to assess the number, characteristics and practical modalities of ENT consultation. Secondary endpoints comprised presenting symptoms, diagnoses, prescriptions, adverse effects, and progression in consultation turnover.

An Excel database (Appendix 1) was made available to each practitioner to collect the following data during consultation: patient age, gender, occupation and presenting symptoms, type of consultation (emergency or in line with the SFORL guidelines (<https://www.sforl.org/>), form of consultation (face-to-face, telephone or video), duration, diagnosis suggested at end of consultation, prescriptions (treatments and examinations), adverse effects (emergency procedure, non-scheduled hospital admission, major complications, death), practitioner age and gender, use of protective gloves and mask (and type of mask), and progression in patient and physician Covid status (clinical examination without nasopharyngeal sampling for reverse transcription–polymerase chain reaction analysis or blood sampling for serology). Physicians were further asked to specify turnover progression over the study period (March 18 to April 18, 2020) compared to the same period for 2019; 11 of the respondents answered this question.

### 3. Results

#### 3.1. Number and practical modalities of consultations

Fig. 1 and Table 1 show the gender and age distribution and main characteristics of the 693 consultations (Appendix 1). Half (347/693) were emergency demands; 57.9% (401/693) were face-to-face, while 28.4% (197/693) were by telephone and 13.7% (95/693) by video without physical contact. The numbers of face-to-face consultation ranged from 9 to 130 (median, 59). 70.7% (490/693) of consultations were in line with SFORL guidelines, mainly for pain (Table 2), while 21.6% (150/693) were follow-up consultations and 1.4% (10/693) were to provide an opinion, without any new symptom being concerned (Appendix 1).

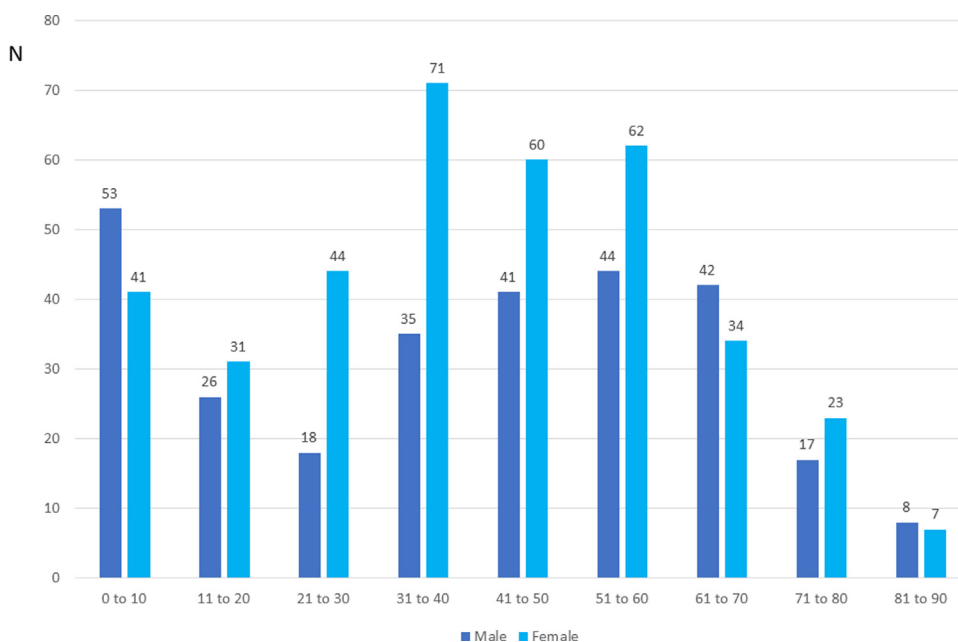
During face-to-face consultations, the physician wore gloves in 53.8% of cases (216/401) and a mask in 92.2% (370/401); masks

**Table 1**  
Main characteristics of the 693 patients consulting between March 18 and April 18, (Appendix 1).

Age	
Median (range)	44 years (9 mo–8 yrs)
< 18 years	19% (135/693)
< 40 years	47% (325/693)
> 80 years	1% (9/693)
Gender (female/male)	391/302
Occupation (> 18 yrs)	
None	38% (210/549)
Working	45% (250/549)
Retired	17% (94/549)

**Table 2**  
Presenting symptoms (Appendix 1).

Symptoms	(N/%)
Otologic	390 (56.3%)
Pain	214 (30.1%)
Hearing loss	61 (8.8%)
Vertigo	61 (8.8%)
Otorrhea and Otorrhagia	31 (4.5%)
Tinnitus	13 (1.9%)
Auricular pruritis	6 (0.9%)
Peripheral facial palsy	4 (0.6%)
Rhinologic	55 (7.9%)
Nasal obstruction	19 (2.7%)
Epistaxis	12 (1.7%)
Facial/sinus pain	9 (1.3%)
Rhinorrhea	8 (1.1%)
Olfactive and gustatory disorder	7 (1%)
Laryngologic	16 (2.3%)
Dysphonic	5 (0.7%)
Dyspnea	5 (0.7%)
Cough	4 (0.6%)
Language disorder	2 (0.3%)
Cervicofacial	77 (11.1%)
Cervical or pharyngeal pain or discomfort	33 (4.7%)
Tumor and tumefaction	22 (3.2%)
Snoring	11 (1.6%)
Headache	6 (0.9%)
Dysphagia	5 (0.7%)
Miscellaneous	163 (23.5%)
Follow-up and opinion	160 (23%)
Head and neck wound and trauma	3 (0.4%)



**Fig. 1.** Age distribution by gender.

**Table 3**  
Diagnoses in consultation (Appendix 1).

Diagnoses	N/%
Otologic	350/67.2%
Otitis (acute, chronic, externa, media, barotrauma, catarrh)	241/46.2%
Foreign body (including wax)	48/9.2%
Benign paroxysmal positional vertigo	24/4.6%
Hydrops, labyrinthitis, inner ear deformity, neurinoma	20/3.8%
Hearing loss (otosclerosis, presbycusis, acoustic trauma, sudden hearing loss)	13/2.5%
Peripheral facial palsy	4/0.8%
Rhinologic	54/10.4%
Acute or chronic rhinitis or rhinosinusitis	37/5.1%
Sinonasal polyposis	9/1.7%
Vascular birthmark	7/1.3%
Congenital anosmia	1/0.2%
Laryngologic	19/3.6%
Gastroesophageal reflux	17/3.3%
Functional dysphonia	2/0.4%
Cervicofacial	56/10.7%
Acute or chronic pharyngitis, adenitis, abscess, tonsillitis	27/5.2%
Tumor (benign or malignant)	11/2.1%
Cyst, wound, skin infection	10/1.9%
Temporo-mandibular dysfunction	4/0.8%
Parotiditis, submaxillitis	3/0.6%
Cochlear implant extrusion	1/0.2%
Miscellaneous	29/5.5%
Snoring and sleep apnea	15/2.9%
Anxiety, stress	10/1.9%
Cervical osteoarthritis	2/0.4%
Headache, migraine	2/0.4%

were surgical in 71.6% of cases (265/370) and FFP2 in 28.4% (105/370). Flexible or rigid endoscopy was performed in face-to-face consultation in 3.2% of cases (12/370).

### 3.2. Symptoms, diagnoses, complementary examinations and prescriptions

Table 2 shows presenting symptoms. The 3 most frequent were otalgia, vertigo and hearing loss (Table 2). The olfactory and/or gustative disorders as presenting symptoms in 7 patients did not suggest Covid-19, being longstanding, due in 2 cases to sinonasal polyposis, in 1 to acute sinusitis, in 1 to aspergilloma, in 1 to congenital anosmia, and in 2 without diagnosis in consultation.

A diagnosis was suggested by the end of the consultation in 75.2% of cases (521/693). Table 3 shows diagnoses (Appendix 1). The 3 most frequent (60.6%; 316/521) were otitis (acute or chronic, media or externa, Eustachian tube catarrh: 238 consultations, with predominant otitis externa), foreign body (most frequently wax plug), and pharyngeal infection (viral or bacterial, with or without abscess). Potentially cancerous tumor was suspected in 2.1% of cases (11/521).

Complementary examinations or treatments were prescribed in respectively 15.7% (109/693) and 63.8% of cases (442/693) (Table 4; Appendix 1). The 3 most frequent examinations (74.3%; 81/109 consultations) were imaging, audiometry and specialist medical opinion (Table 4). The 3 most frequent treatments (81.2%; 365/439 prescriptions) were ear drops, nasal cavity care (nasopharyngeal disobstruction and/or spray), and oral antibiotics (Appendix 1).

### 3.3. Adverse effects, Covid status and economic impact

Three patients with indications for endoscopy for suspected cancer (0.003%) were referred to the Réunion Island university hospital. Surgical procedures indicated in consultation (3.1% of consultations; 21/693) were scheduled for end of lockdown. One child who preferred video consultation due to fear of the virus

**Table 4**  
Complementary examinations and treatments (Appendix 1).

	N (%)
Complementary examinations	100 (15.7%)
Imaging	32 (4.6%)
Audiometry and/or vestibular assessment	34 (4.9%)
Other medical specialist opinion	15 (2.2%)
Dental surgeon opinion	9 (1.3%)
Sleep polygraphy	6 (0.9%)
Bacteriology sampling	5 (0.7%)
Treatments	439 (63.3%)
Ear drops (with or without packing)	238 (34.3%)
Lavage, nasal spray, cauterization	72 (10.3%)
Oral antibiotics	56 (8.1%)
Oral level-1 analgesia	55 (7.9%)
Oral anti-vertigo drugs	36 (5.2%)
Maneuver for positional vertigo	22 (3.2%)
Oral anti-gastroesophageal reflux drugs	20 (2.9%)
Oral steroidal anti-inflammatory drugs	18 (2.6%)
Hearing aid	6 (0.9%)
Nursing care	5 (0.7%)
Oral level-2/3 analgesia	2 (0.3%)
Speech therapy, orthoptics, physiotherapy	4 (0.5%)
Oral non-steroidal anti-inflammatory drugs	0 (0%)

Appendix 1 Excel database.

required emergency surgery (cochlear implant extrusion): i.e., major complications rate, 1/693; 0.001%. No patients or physicians developed signs of Covid-19. All physicians reported decreased turnover, between 47.3% and 91% (median, 75.6%) (Fig. 2).

## 4. Discussion

Réunion Island, in the western part of the Indian Ocean, is one of the nine extra-continental regions of the European Union. 70.5% of the island's full-time private ENT practitioners took part in the present prospective observational study of the impact of the first month of lockdown against Covid-19 on consultation practices, which thus well represented the real-life situation of private ENT practice in the Island during this very particular period. Several findings of interest emerged.

The first was that the physicians adapted their consultation practices. To limit viral spread inside the office and to meet the SFORL guidelines (<https://www.sforl.org/>) on justifiable ENT consultations during lockdown, 28.4% and 13.7% of the 693 consultations were made by telephone and video respectively (Appendix 1). None of the physicians had any prior experience of video-consultation, and use was limited by demographic and geographical factors. The Réunion population has Malagasy, West African, East African, Indian, Annamese, Malay, Chinese and European origins, with an illiteracy rate of almost 25% (<https://www.insee.fr/fr/statistiques>), hindering use. A second obstacle was socioeconomic deprivation, with a 38% unemployment rate and 39% poverty rate in the Island (<https://www.insee.fr/fr/statistiques>), like in the present cohort (Fig. 1 and Table 1). Although the ARCEP (electronic communication and post regulation authority) reports 98% telephone cover and a high rate of fiberoptic connection, Internet access is narrowband for 25% of the population or otherwise insufficient for video-consultation for 30% (<https://www.arcep.fr/la-regulation/grands-dossiers-thematiques-transverses/regulation-telecom-outr-mer.html>), and none of the currently available solutions enable on-line payment of the part of the fee not covered by the national health insurance scheme, unlike in European France. Lastly, as advised by the SFORL [2], offices were reorganized to enable social distancing: waiting rooms were rearranged, without any magazines or toys, with no more than 2 patients waiting at any one time. A poster in the entrance advised patients to come alone and explained the new procedures: not to arrive

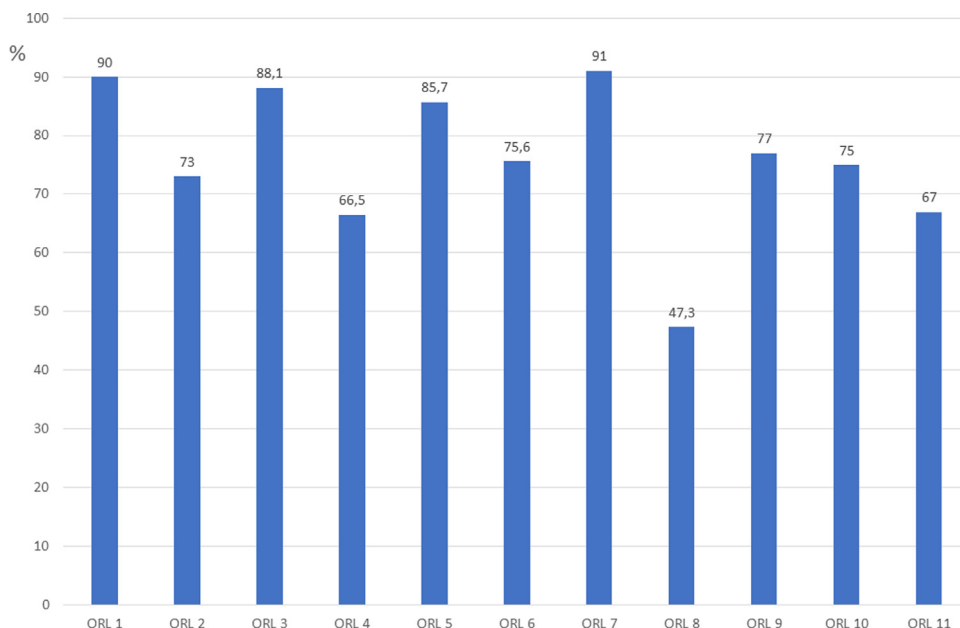


Fig. 2. Percentage decrease in consultation turnover.

unannounced in case of signs of Covid, hydroalcoholic gel available, plexiglass screens protecting secretaries, and contactless credit card payment.

The second finding of interest concerned reasons for consultation (Table 2; Appendix 1), diagnoses (Table 3; Appendix 1) and treatments (Table 4; Appendix 1), which were seen as urgent by 50% of patients. Pain and vertigo accounted for 45.8% of presenting symptoms (Table 2), resulting in a large proportion of benign as compared to severe pathologies: there were only 11 diagnoses of tumor, while 34.3% of consultations were for acute otitis externa. Hence, ear drops was one of the 3 most frequent treatments (7.9%) (Table 3), whereas the rate for level II-III analgesics was only 0.3%. This may be due to the French health system, where specialist consultations tend to follow consultation with the

patient’s general practitioner or pediatrician; hence, most of the patients presenting in ENT with otitis externa had already been prescribed analgesics. Finally, these findings demonstrate the difficulty of managing patients who do not fit the framework of the SFORL guidelines ([www.sforl.org](http://www.sforl.org)) but consider their case to require “emergency” treatment.

The third finding of interest was the absence of adverse effects (emergency surgery, unscheduled admission, major complications or death). The major complications rate was 0.001% (a child followed by video-consultation needed emergency surgery for cochlear implant extrusion), without death, and only 0.003% of patients were referred to the university hospital, with a 3.1% rate of surgery scheduled for after lockdown. These good figures were despite the fact that many pathologies seen in consultation

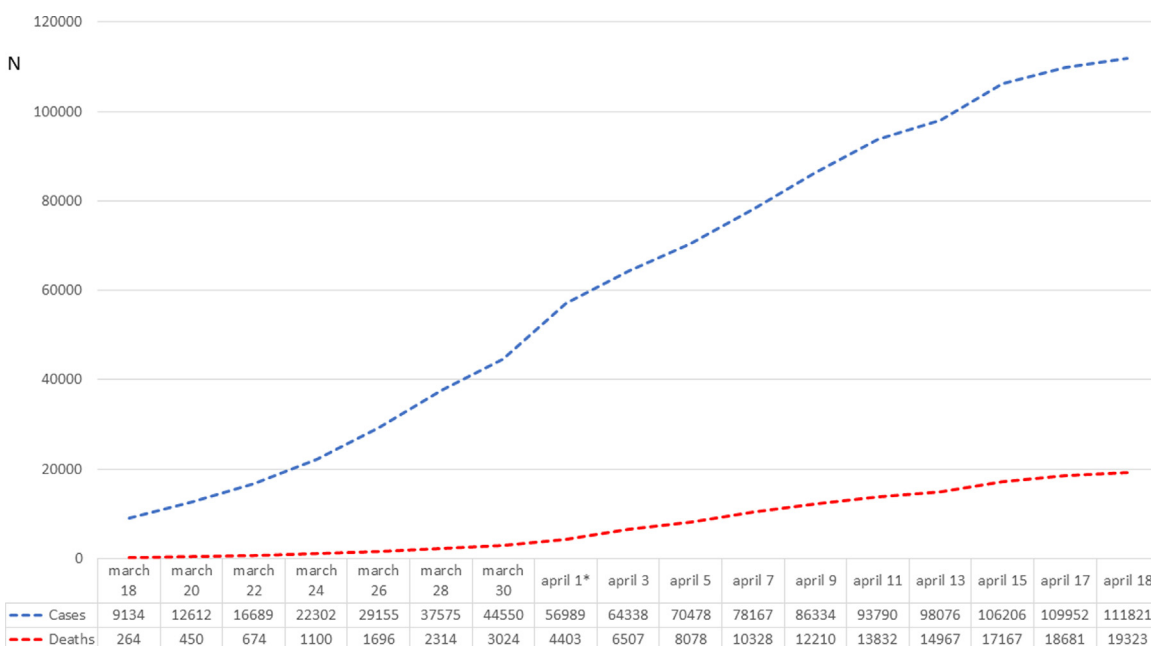
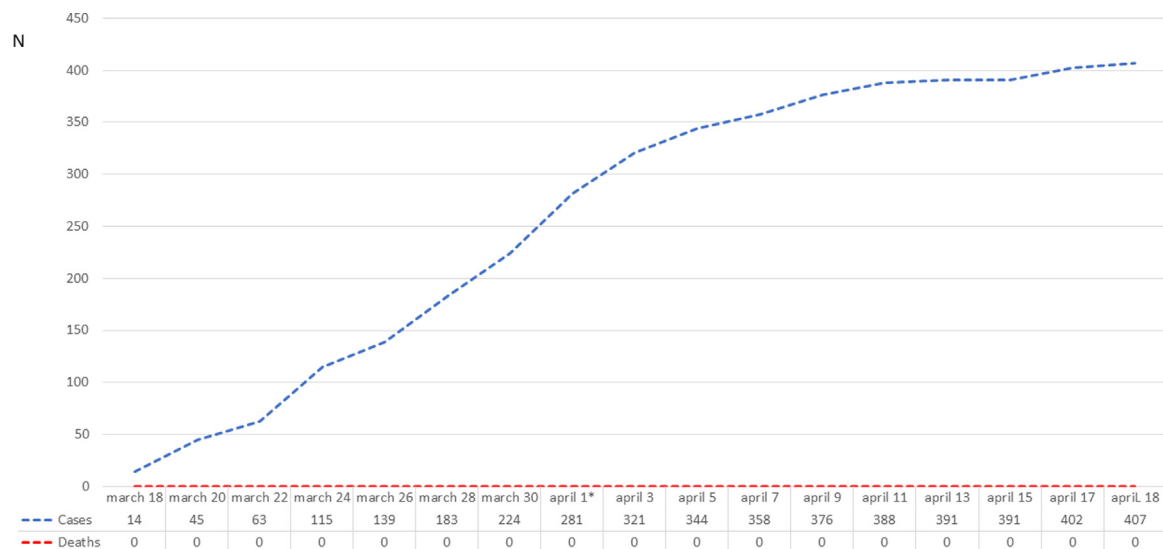


Fig. 3. Cumulative progression of Covid-2-related cases and deaths in France (data at May 1, 2020: including public-sector nursing homes; N: number).



**Fig. 4.** Cumulative progression of Cov-2-related cases and deaths in Réunion Island (data at May 1, 2020: including public-sector nursing homes; N: number).

(infections, vertigo, tumor, etc.; cf. Table 2) could have progressed toward complications without timely treatment.

This relative absence of adverse effects of treatment was combined with absence of any Covid-19 infection in patients or physicians during the study period and the following month. Several factors account for these good results. Firstly, the pandemic had less impact in Réunion Island during the study period (Fig. 3) than in European France (Fig. 4). Secondly, relatively few patients were seen by each physician during the study month: 9 to 130, for a median of 59. And thirdly, physicians wore masks in 92.2% of face-to-face consultations and limited endoscopy to just 3.2% of cases.

However, not everything was satisfactory. As all over the world, mask supply was tight. Some local stocks were past their use-by date or moldy and only general practitioners and hospital physicians were supplied during the study period [1]. Other medical specialists, such as ENT physicians, only received masks (in insufficient quantity) thanks to the generosity of private (cultural and industrial) bodies, resulting in a lack of mask in 7.8% of cases in the present series. Hydroalcoholic gel was also in short supply at first, until the Island's large rum industry began supplying it to health professionals on April 1st. There was also a shortage of protective gloves for ENT physicians, who were able to wear them in only 53.8% of face-to-face consultations. And lastly, respondents reported a significant decrease in turnover (Fig. 2; median decrease of 76.5%), leaving them unable to cover overheads (secretariat, bills, assistance, social charges).

All of the above testifies to Réunion ENT specialists' commitment to their patients and the health risks they have run in a period where published studies highlight the high rate of CoV-2 infection in caregivers [8,9]. In the USA, in mid-April, the Center for Disease Control reported a 20% rate of Covid in health workers and suggested entrusting active care preferably to younger healthy persons and maximizing screening in health workers (test for slightest symptom, daily symptom screening, mask at work and elsewhere) to limit community infection [9].

## 5. Conclusion

The present survey of two-thirds of ENT physicians in full-time private practice in Réunion Island was representative of ENT specialist' attitudes in the CoV-2 epidemic in the Island. By keeping

their offices open despite supply problems for protective masks, gloves and hydroalcoholic gel, and ensuring consultation in 50% of cases considered emergencies by the patient and/or coming under the SFORL guidelines, and adapting practice (e.g., telephone or video consultation) so as to ensure continuity of care despite severe economic impact, these specialists, like their hospital colleagues, helped forestall the collapse of the French health system, honoring the ethical code that should guide all physicians in their daily practice.

## Disclosure of interest

The authors declare that they have no competing interest.

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## Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <https://doi.org/10.1016/j.anorl.2020.06.013>.

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