

Health Service Research

The role of general practitioners in managing the COVID-19 pandemic in a private healthcare system

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Abstract

Background: The canton of Vaud's public health authorities, in Switzerland, invited general practitioners (GPs) to participate in managing suspected COVID-19 patients and continue caring for their non-COVID-19 patients. However, this course of action was not mandatory. The present study's objective was to describe and understand how involved GPs were in dealing with the COVID-19 pandemic's first wave.

Methods: This mixed-methods study combined a retrospective quantitative survey and a qualitative explanatory investigation. All of the canton's GPs were invited to participate in the quantitative survey via an online questionnaire including sections on: specific organization regarding COVID-19 activities and suspected COVID-19 patients, activities relating to non-COVID-19 patients, consequences on the practice's professional staff, and opinions about the public health authorities' pandemic crisis management. The qualitative investigation involved interviews with 10 volunteer GPs.

Results: The participation rate was 41%. One third of GPs chose not to reorganize their practice for the specific management of suspected COVID-19 patients. The number of weekly activities and interventions decreased by over 50% at 44% of practices, mostly due to a lack of patients. Even in an extraordinary crisis, GPs maintained their choice of whether to become involved, as their private and independent status allowed them to do. However, those who chose to be involved felt frustrated that the public health authorities did not recognize them as major health providers in the management of the pandemic.

Conclusion: This study illustrated the complexity and limitations of a primary care system based completely on private healthcare providers.

Key words: acknowledgment of role, communication, COVID-19 pandemic management, general practitioners, private healthcare system, public health authorities

Introduction

The Swiss healthcare system is considered one of the best in the world, especially according to indicators of life expectancy and patient satisfaction.¹ The current model for the provision of primary care (PC) via general practice (mostly comprising physicians trained in general internal medicine) is a private sector activity. It

is largely unregulated without any formal link with public health authorities and based on a combination of fee-for-service and fee-for-time funding. This quite traditional PC organization is also encountered in other western countries i.e. France, Belgium, Canada, and the United States. However, whereas many nations have initiated reforms in the organization of PC, Swiss PC's organization has

Key Messages

- Swiss GPs were free to participate in managing suspected COVID-19 patients.
- 64% of GP practices chose to receive suspected COVID-19 patients for testing.
- GPs involved expected that authorities recognized them as major health providers.

remained largely unchanged over the past decades. It is constituted of small practices of general practitioners (indeed 45% of GPs work alone) who work almost exclusively just with medical assistants.²

Faced with its first COVID-19 cases at the end of February 2020, Switzerland, like most countries, initially focused its efforts on measures to lockdown the population and strengthen hospital capacity. In addition, hospitals had to organize the provision of diagnostic tests for COVID-19.³ On March 13, 2020, as the first wave broke, Federal Decree⁴ on measures to fight the SARS-CoV-2 coronavirus allowed general practices to continue with their regular outpatient activities, and GPs to provide care for patients suspected of having COVID-19, provided they had a protection plan. However, in light of the rapid increase in cases, a March 16 amendment to the Decree⁵ called on “medical practices to renounce all non-urgent medical treatments and procedures” until April 27. On that date, GPs’ practices were invited to return to normal activity. In addition, at the cantonal level, the Vaud decree of April 1, 2020, on the organization of the healthcare system during the phase of the fight against the SARS-CoV-2 coronavirus,⁶ specified that the GPs had to “ensure the usual follow-up of their patients [including those suffering from COVID-19], in order to avoid overloading the healthcare system, particularly hospital emergency departments.” PC physicians were, therefore, invited to participate actively in managing the crisis.⁷ Finally, as case numbers dropped during the first wave’s descending phase and as test criteria were broadened, the canton of Vaud’s authorities proposed that general practices be allowed to carry out COVID-19 tests without a medical consultation. Once again, self-employed GPs had the choice of whether to implement this strategy in their practices or not.

To summarize, when the crisis hit the canton of Vaud, the public health authorities invited GPs to participate in the management of patients suspected of having COVID-19 and to continue caring for their non-COVID-19 patients. However, these requests were not mandatory, and GPs were free to organize themselves as they wished in the face of this challenge.

The present study’s objectives were to describe and understand GPs’ levels of involvement in dealing with the COVID-19 pandemic’s first wave and its evolution in the canton of Vaud, Switzerland.

Methods

We carried out a mixed-methods study, using a convergent design including a retrospective quantitative survey and a qualitative explanatory study.^{8,9}

Retrospective quantitative survey

Population

All the canton of Vaud’s general practices were invited to participate in the study by mail. The documentation included a presentation of the survey, a web link to connect to it, and a unique practice identifier. Completing the paper questionnaire was also an option. The unit of study was the practice (not individual GPs), and in group practices, one GP responded for the entire practice. We sent two

reminders: 2 weeks after the first mailing and 10 days after that (including by email when an email address was available). The data collection took place between September and December 2020.

Data

The questionnaire (see [Supplementary File 1](#)) focused on the first wave of the pandemic (March–end of June 2020), distinguishing between the period of restriction to urgent activities (March 16–April 27, 2020) and the period when the first wave ends (May–end of June 2020). It included parts examining:

- The practice’s general characteristics, i.e. rural/urban location and workforce size (GPs, medical assistants, and other healthcare professionals, in full-time equivalents).
- Specific organization regarding the management of COVID-19 activities and suspected COVID-19 patients.
- Activities relating to other patients, such as preventive contacts with vulnerable patients (patients over 65 years of age and/or with chronic diseases such as hypertension, diabetes, cardiovascular disease, chronic respiratory disease, immunosuppression cancer), establishing vulnerability certificate if necessary (during the first wave a certificate of vulnerability could be requested by the employer to justify telework), and providing telehealth consultations (telephone consultation).
- Physicians’ opinions regarding access to personal protective equipment (PPE) and the public health authorities’ pandemic crisis management.

In the present study, we were interested in the organization of general practices and activities mainly during the period of emergency room restrictions and in doctors’ opinions on the management of the first wave.

Statistical analysis

We performed descriptive analyses using Stata software (v16), including frequencies, means, and medians for the variables of interest.

Qualitative explanatory study

Population

We conducted individual interviews with 10 GPs. Participation in interviews was proposed to all the GPs of the canton through the quantitative questionnaire (last question). As only one GP mentioned his willingness to participate in an interview, we also directly asked some members of our professional GPs’ network (these GP also participated in the quantitative survey). This purposive sampling considered practice locations (rural/urban), group or solo practicing and GP’ gender ([Table 1](#)).

Data

We developed interview guide (see [Supplementary File 2](#)), including questions investigating: practices’ choices to manage or not manage suspected COVID-19 patients; opinions about the involvement of

Table 1. Characteristics of the study and canton of Vaud GP populations.

Practices	Quantitative survey	Whole canton
N	222	539
Group (%)	50.2	54.0
Urban area (%)	36.0	38.5
GP (N = 10)	Qualitative survey (N/10)	
Group	9/10	
Gender female	5/10	
Urban area	2/10	

general practice in the public health authorities' management of the crisis; and ways to improve organization and preparedness for the next pandemic. The two first authors of the project, a senior researcher and a junior researcher, both trained in qualitative methods, conducted the interviews, mostly face-to-face. They mainly occurred in August and September 2020 (one last interview has been conducted in February 2021) and lasted about 1 h. Data saturation was rapidly obtained; no additional themes (codes) emerged from the last three interviews.

Analysis

The investigators followed the recommendations developed by Gale to conduct a thematic analysis of the data.¹⁰ Qualitative data were audio-recorded, then transcribed, anonymized, and electronically stored at Unisanté. Data were coded and analyzed using MAXQDA qualitative data analysis software and an analysis guide. For convenient reason, a single researcher coded GPs' transcripts. First, the researcher assigned descriptive code to relevant narratives. The data were then divided in themes and subthemes after discussion between the first and second authors. A coding book was established and constantly adapted throughout the coding process. Classifications were discussed and validated by all the authors. Interview findings were classified into three themes: GPs' participation in the COVID-19 crisis response; communication between PC providers and public health authorities; and access to PPE. During the analysis, the first author and senior researcher triangulated the preliminary results by comparing, contrasting, and corroborating. Interviews were in French and were translated into English using a translation/back-translation process involving the authors and a professional translator.

Ethical considerations

Participation in both surveys was voluntary and no written consent was requested from the participants. The survey documentation included a section on participants' rights, stating that participation was voluntary and that they could withdraw from the study at any time without justification. Therefore, their participation was considered as informed consent. Participants were assured that the data would be kept anonymous. Ethics approval (Protocol 2020-02003) was obtained from the Human Research Ethics Committee of the Canton of Vaud, Switzerland.

Results

Quantitative survey

The quantitative survey was completed by 222 general practices (41% participation rate); about half were solo practices (Table 1). The vast majority of practices (98%) remained open during the

Table 2. Organization of general practices for the management of the COVID-19 pandemic's first wave (March–June 2020).

Practice organization	N	%
Practice remained open ^a	218	98.2
Practice managed COVID-19 patients ^a	126	63.6
Set up a specific COVID-19 pathway within the practice ^a	95	76.6
Set up a specific COVID-19 pathway outside the practice ^a	10	8.1
Set up fast-track testing (without a medical consultation) on request ^b	63	29.0

^aMarch 16–April 27, 2020/from the end of June 2020.

^bFrom the end of June.

period restricted to emergency activities, with 64% of those practices receiving suspected COVID-19 patients for testing. Many GPs organized specific testing pathways inside their practices (77%) or outside their practices (8%) for these patients. When able to, as suggested by the public health authorities (at the end of June), 29% of practices set up fast-track testing, without the need for a medical consultation (Table 2).

During the period when medical practices were restricted to emergency activities only and the population was in lockdown, the number of weekly activities decreased by more than 50% for 44% of the practices. Patient demand for consultations decreased by more than 50% in 58% of the practices. All the respondents (99%) reported financial losses. The massive move to telehealth consultations (by phone) that occurred during the first weeks (reported by all participants) had been definitively adopted by 6% of the practices a few months later (Table 3).

Table 4 describes GPs' opinions of the public health authorities' crisis management. GPs reported that procuring gowns (77%), goggles (70%), and hydro-alcoholic solution (57%) was difficult. However, they mostly declared that healthcare professionals were correctly protected (73%). Finally, when asked whether they would have liked to be more involved in crisis management, 33% said *yes*, and 24% did not know. In addition, they were confident in the health authorities' abilities to manage the health crisis.

Qualitative interviews analysis

Several major issues emerged from these interviews, including relations between GPs and the public health authorities, choosing whether or not to be involved in the measures against COVID, and the communication loop.

The first theme discussed was the level and quality of integration of GPs by the public health authorities' crisis management plan. What emerged from the interviews was that GPs felt abandoned by the public health authorities; they did not regret not having been more involved. "I felt that we were all alone, isolated [when] we really wanted to do things right." Interviewed GPs accused the authorities of a certain lack of interest in how the crisis had been managed, and especially experienced, in general practices. "No representative of the [public health authorities] ever contacted us to see how things were going." GPs complained that they had had to fend for themselves, regarding both access to PPE and organizing themselves to manage suspected COVID-19 patients and their regular patients. They all reported having to rely on their own resourcefulness: "Nobody helped us."

On the other hand, their self-employed status and the private sector nature of PC in Switzerland allowed GPs a good degree of

Table 3. Consequences of the COVID-19 pandemic on the activities of general practices during the COVID-19 pandemic's first wave (March–June 2020).

Type of consequences					
Variation in activities ^a	N	Reduction ≥50%	Reduction 0%–49%	No change	Increase
		(n) %	(n) %	(n) %	(n) %
Changes in the number of weekly activities	202	(90) 44.3	(104) 51.8	(4) 2.0	(4) 2.0
Changes in the number of patients	201	(113) 56.0	(82) 41.0	(4) 2.0	(2) 1.0
Financial losses	197	(58) 28.4	(139) 69.7		
Consequences on workforce ^a		Mean	Median		
Temporary unemployment (mean FTE)		1.2	0		
Changes in practices for non-COVID-19 patients		Yes	No		—
		(n) %	(n) %		
Telehealth ^a	202	(156) 77.2	(46) 22.8		
More telephone consultation	156	(144) 92.3			
More videoconferencing consultation	156	(24) 15.4			
More emails	156	(89) 57.0			
		Definitively stopped	Partially adopted	Adopted	
		(n) %	(n) %	(n) %	
Adoption of telehealth consultation after the most acute phase ^b	185	(88) 47.6	(85) 46.9	(12) 6.5	

^aMarch 16–April 27, 2020.^bPhone, video, email consultation early June 2020.

latitude in how involved their practices became in dealing with the pandemic, which they all seemed to appreciate. “I said to myself, *the advantage of being alone is that we can also decide how we want to do things.*” A similar reaction was reported with regard to being restricted to providing emergency interventions. “I told myself, *well, it's me who interprets what an emergency is. I am the expert in my practice. [...], no one will ever come and blame me if I see this patient.*” Finally, among GPs who did care for COVID-19 patients, participating in dealing with the pandemic appeared natural and legitimate: “*We are there for the population, and we are already deployed [throughout the community].*” Their actions were even described with pride: “*If we hadn't been able to play a role in this, I would have felt completely robbed; I would have felt as if I had been prevented from playing my role, fulfilling my mission.*”

However, some recognition by the public health authorities of this willingness to get involved would have been appreciated: “*A thank you, I think, would [have been] nice.*” Recognition—not necessarily financial recognition—of GPs' choices to invest in their communities by participating in testing had been expected: “*There are family physicians, [...] who are also interested in community issues and who are committed to improving them.*” Finally, “[*for the public health authorities*], *whether we had been there or not didn't change anything, in fact.*” Some GPs attempted to explain this situation: “*They didn't know what the GPs' practices could bring to the table.*”

Another theme was related to the communication loop between GPs and public health authorities. The complexity and multiplicity of the stakeholders involved were reported to be damaging and the cause of delays in the transmission of information: “*It was a kind of weird cacophony.*” “*It was all over the place.*” Indeed, communication did not only involve those two stakeholders but also

several professional associations. This three-way communication was not always understood or accepted. Direct communication between health authorities and GPs would have seemed more effective and sensible to them. “*I think the first thing should be that there is [only] one interlocutor.*” In addition, the communication strategy surrounding the personal protection equipment was also criticized: “*Nobody really had the courage to tell us, ‘Stop looking for material. You won't find any!’*”

Discussion

The present study's findings showed that the vast majority of GPs chose to keep their practices open during the period when care was restricted to emergencies. In fact, the qualitative study revealed that they had significant latitude in interpreting what emergency activities in general practice were. Indeed, some GPs canceled almost no consultations, considering that even their patients' mental health and psychological well-being were sufficient reason to maintain consultations. In addition, although they had the choice of whether or not to participate in the management of suspected COVID-19 patients, many (about 2/3) did so considering it their mission. The variability in GPs' responses to the possibility of participating and being major providers in the COVID-19 response illustrates the diversity of their attitudes towards their public health responsibilities. Financial aspects probably also played a role in GPs' degree of involvement in dealing with the pandemic. Although this did not emerge as a major issue in the discussions with GPs, their rather low support for the possibility of providing COVID-19 tests without a medical consultation (only one third of practices) may provide an indication. In Switzerland's fee-for-service and fee-for-time remuneration system, providing

Table 4. GPs' opinions of the public health authorities' crisis management skills during the COVID-19 pandemic's first wave (March–June 2020).

Opinions about...				
Access to personal protective equipment	N	Difficult ^a (%)	Easy ^b (%)	—
Masks	222	47.3	52.7	
Gowns	204	77.0	23.0	
Goggles	199	70.3	29.7	
Hydro-alcoholic solution	222	44.6	55.4	
How do you think the professionals were protected?	222	Poorly (%) 23.9	Well (%) 73.4	Do not know (%) 2.7
Communication with the public health authorities		Yes (%)	No (%)	Do not know (%)
Describe the information delivered by the public health authorities?				
It was not reactive enough	210	34.3	53.8	11.9
Changes were far too frequent	213	65.3	31.0	3.8
Information was sometimes contradictory	212	63.2	30.2	6.6
There were too many sources	213	59.1	36.1	4.7
Did you trust the federal public health authorities' management of the crisis?	220	76.4	12.3	11.4
Did you trust the cantonal public health authorities' management of the crisis?	219	64.8	20.5	14.6
Would you have liked the authorities to have integrated you/GPs more in crisis management?	221	33.5	43.4	23.1

^aVery difficult and somewhat difficult.

^bVery easy and quite easy.

testing without a consultation is generally not cost-effective for GPs. Choosing interventions according to their profitability is a well-known perverse effect of this type of system.¹¹ However, GPs' attitudes may be understandable because of their self-employed status and the employees they have to pay. Interestingly, the development of telehealth, observed in the first wave, was generally halted afterwards, unlike in other countries.^{12,13} The financing system and the culture of the physicians are probably at the origin of this stop.

Questions must be asked about how healthcare professionals are mobilized to meet the huge challenges of a massive viral outbreak. Going beyond Switzerland's private PC system, how can its private GPs, recognized frontline providers, be integrated into collective action against a public health crisis? This would also imply their participation in monitoring the pandemic and providing data to the authorities.¹⁴ Literature about the role of PC providers during the COVID-19 pandemic is still scarce: most existing publications refer to clinical data and hospital settings. Although it may seem natural to put an initial focus on clinical knowledge and the ability to manage severe cases, this also reveals how poorly integrated PC is among the major providers in this crisis. We now know that the vast majority of COVID-19 cases are mild (even asymptomatic), and thus, PC is an obvious point of entry for the provision of care services.^{13,15} For this reason, some authors have begun to underline the role of PC, particularly GPs, in the COVID-19 outbreak.^{16–20} A recently created French-speaking research group on PC, including partners from France, Belgium, Québec, and Switzerland,²¹ compared the involvement of PC in its member countries (or province for Quebec)^{22–24} observed different levels of involvement, mainly depending on the healthcare system's characteristics and particularly the existing links between public health authorities and general practices. In Québec, Canada, for instance, general practices were reorganized into "hot clinics" where potential COVID-19 patients were sent and "cold clinics" for other patients. Under this system, some GPs agreed to "lose" some of their patients and manage some of their colleagues' patients. This

would appear to be too complicated to be implemented in a private PC system, such as Switzerland's.

GP who chose to be involved in the crisis management expected that authorities recognized them with respect and consideration as major health providers. They expected to be rewarded, not necessarily financially, but through respect and consideration. In addition, they waited for the authorities to manage them more closely. This reveals a certain level of ambiguity in GPs' attitudes. They are very much attached to their professional freedom but want to be considered among the healthcare system's major players. In that sense, the COVID-19 crisis revealed a long-standing contradiction: how to reconcile healthcare providers who are independent, individualist, and entrepreneurial with community healthcare services. Finally, the lack of overall governance and monitoring for general medical practices is also one of the consequences of the Swiss healthcare system's private organization.

Limitations

The present study's participation rate was under 50%, yet 41% is higher than the typically reported rates of about 30%–35% among this type of population. The sample's proportion of solo practices was close to the proportion observed across the canton as a whole. On this criterion, the sample's representativeness was good. The study was retrospective, so some recall bias is possible. In addition, some GPs filled the questionnaire during the second wave, and this may have affected GPs' opinions. Because just one GP was responsible for completing the questionnaires of group practices, this may have affected the data's reliability. Finally, some question i.e. the opinion about the communication with the public health authorities, consisted of yes/no answers, which limits the nuance of the answer. Regarding qualitative data, most of the interviews included GPs who chose to participate in managing the COVID-19 crisis. It is therefore difficult to analyze the reasons why their colleagues did not. In addition, the proximity of the sampling with the reviewers (since most of the interviewed GPs came from our professional network) could

have both influenced the data and their interpretation. Finally, only one researcher coded the data for convenient reason, which have generated a certain subjectivity.

Conclusion

Even in a healthcare crisis of the magnitude of the global COVID-19 pandemic, Swiss GPs had the opportunity to choose whether they would become involved in managing this extraordinary situation, as their private status allows them to do. However, when they did choose to be involved, they felt frustrated that the public health authorities did not recognize them as major healthcare providers. This illustrates the complexity and limitations of a completely private system for the provision of PC. Finally, the integration of PC professionals in the response to a health crisis cannot be improvised, especially in a private PC system. A joint construction of the response strategy is necessary very early on. This integration must allow for a partnership operation with support, recognition, and mutual respect.

Supplementary material

Supplementary material is available at *Family Practice* online.

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Ethical approval

Ethics approval was obtained from the Human Research Ethics Committee of the Canton of Vaud, Switzerland (No protocol 2020-02003).

Conflict of interest

None declared.

References

1. OECD (WHO). OECD reviews of health systems: Switzerland 2011. 2011 [accessed 2020 Sep 7]. <https://www.oecd.org/switzerland/oecdreviewsofhealthsystems-switzerland.htm>
2. Cohidon C, Cornuz J, Senn N. Primary care in Switzerland: evolution of physicians' profile and activities in twenty years (1993–2012). *BMC Fam Pract*. 2015;16:107.
3. Office fédéral de la santé publique. Ordonnance sur les épidémies 2019. 2015 [accessed 2020 Sep 7]. <https://fedlex.data.admin.ch/filestore/fedlex.data.admin.ch/eli/cc/2015/298/20190301/fr/pdf-a/fedlex-data-admin-ch-eli-cc-2015-298-20190301-fr-pdf-a.pdf>
4. Conseil fédéral suisse. Ordonnance 2 sur les mesures destinées à lutter contre le coronavirus. 2020 [accessed 2020 Sep 7]. <https://www.news.admin.ch/news/message/attachments/60654.pdf>
5. Conseil fédéral suisse. Ordonnance 2 sur les mesures destinées à lutter contre le coronavirus. Bern2020 [accessed 2020 Sep 7]. <https://fedlex.data.admin.ch/filestore/fedlex.data.admin.ch/eli/cc/2020/141/20200317/fr/pdf-a/fedlex-data-admin-ch-eli-cc-2020-141-20200317-fr-pdf-a.pdf>
6. Vaud Conseil d'Etat. ARRÊTÉ 800.00.010420.1 sur l'organisation du système de soins pendant la phase de lutte contre le coronavirus (COVID-19) du 1 avril 2020. 2020 [accessed 2020 Sep 7]. <https://www.vd.ch/toutes-les-actualites/decisions-du-conseil-detat/seance-du-conseil-detat/id/679841/>
7. Cohidon C, Senn N. Primary care during the first wave of Covid-19 in Switzerland. *Rev Med Suisse*. 2020;16(713):2127–2130.
8. Pluye P, Bengoechea EG, Granikov V, Kaur N, Tang D. A world of possibilities in mixed methods: review of the combinations of strategies used to integrate qualitative and quantitative phases, results and data. *Int J Mult Res Approaches*. 2018;10(1):41–56.
9. Creswell JW, Clark VL. *Designing and conducting mixed methods research*. 2nd ed. Los Angeles: Sage Publications; 2011.
10. Gale NK, Heath G, Cameron E, Rashid S, Redwood S. Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Med Res Methodol*. 2013;13:117.
11. Basu S, Andrews J, Kishore S, Panjabi R, Stuckler D. Comparative performance of private and public healthcare systems in low- and middle-income countries: a systematic review. *PLoS Med*. 2012;9(6):e1001244.
12. Johnsen TM, Norberg BL, Kristiansen E, Zanaboni P, Austad B, Krogh FH, Getz L. Suitability of video consultations during the COVID-19 pandemic lockdown: cross-sectional survey among Norwegian general practitioners. *J Med Internet Res*. 2021;23(2):e26433.
13. Alsnes IV, Munkvik M, Flanders WD, Øyane N. How well did Norwegian general practice prepare to address the COVID-19 pandemic? *Fam Med Community Health*. 2020;8(4):1–6.
14. Krist AH, DeVoe JE, Cheng A, Ehrlich T, Jones SM. Redesigning primary care to address the COVID-19 pandemic in the midst of the pandemic. *Ann Fam Med*. 2020;18(4):349–354.
15. Dunlop C, Howe A, Li D, Allen LN. The coronavirus outbreak: the central role of primary care in emergency preparedness and response. *BJGP Open*. 2020;4(1):1–3.
16. Sarti TD, Lazarini WS, Fontenelle LF, Almeida APSC. What is the role of primary health care in the COVID-19 pandemic? *Epidemiol Serv Saude*. 2020;29(2):e2020166.
17. Park S, Elliott J, Berlin A, Hamer-Hunt J, Haines A. Strengthening the UK primary care response to covid-19. *BMJ*. 2020;370:m3691.
18. Pan Z, Yang T, Chi C, Wang C. The role of CARDPC in response to COVID-19 in primary care in China. *NPJ Prim Care Respir Med*. 2020;30(1):41.
19. Medina MG, Giovanella L, Bousquat A, Mendonça MHM, Aquino R; Comitê Gestor da Rede de Pesquisa em Atenção Primária à Saúde da Abrasco. Primary healthcare in times of COVID-19: what to do? *Cad Saude Publica*. 2020;36(8):e00149720.
20. Green K. How GPs can contribute to the challenge of covid-19. *BMJ*. 2020;369:m1829.
21. Senn N. Pandémie Covid-19: stress-test pour les soins primaires? *Rev Med Suisse*. 2020;16(713).
22. Jamart H, Van Maele L, Ferguson M, Drielsma P, Macq J, Van Durme T. Primary care during the first wave of Covid-19 in Belgium. *Rev Med Suisse*. 2020;16(713):2119–2122.
23. Breton M, Hudon C. Primary care during the first wave of Covid-19 in Québec, Canada. *Rev Med Suisse*. 2020;16(713):2131–2134.
24. Bourgueil Y, Falcoff H, Ramond-Roquin A, Savigneau G, Bouchez T. Primary care during the first wave of Covid-19 in France. *Rev Med Suisse*. 2020;16(713):2123–2126.