

**LETTER TO THE EDITOR**

# Implication of COVID-19 in oral oncology practices in Brazil, Canada, and the United States

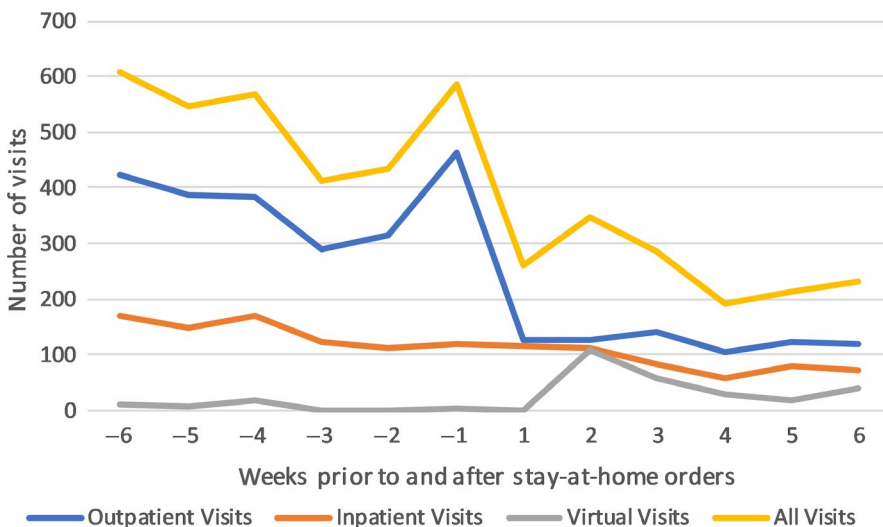
The newly emerged coronavirus disease 2019 (COVID-19) is an infectious disease that has spread rapidly throughout the world. The most common signs and symptoms are fever, dry cough, and shortness of breath which can progress to severe viral pneumonia and multi-organ failure in susceptible patients (Chen et al., 2020; Meng, Hua, Bian, 2020; Wang et al., 2020). Droplet transmission and person-person transmission appear to be the main route of transmission of COVID-19; however, asymptomatic patients are also carriers of the virus (Rothe et al., 2020; Zhang, et al., 2020).

Patients who are under medical care for chronic diseases and without urgent concerns or complications have generally been encouraged to stay at home during this time (we must note that this is a rapidly evolving situation, and at the time of submission of this manuscript there has been some loosening of restrictions at some centers). However, many patients who are undergoing oncological treatment (OT) require regular office visits in order to receive care and to be evaluated for treatment-emergent side effects. Oral medicine specialists play an important role in mitigating oral side effects and ensuring that cancer patients are able to maintain adequate oral health and function, as well as maintaining their scheduled treatment without interruption. Some cancer patients require emergent

dental care prior to initiation of cancer therapy to reduce the risk of complications that could lead to delays in the commencement of OT (Brennan et al., 2017; Lalla et al., 2017).

This letter highlights the impact of the COVID-19 pandemic on the clinical workflows of cancer center-based Oral Medicine practices in Brazil (A.C. Camargo Cancer Center, São Paulo), Canada (Northeast Cancer Centre, Health Sciences North, Sudbury), and the United States (Dana-Farber/Brigham and Women's Cancer Center, Boston). The main activities of these services include the prevention and management of oral side effects of OT. The patients are evaluated before, during, and after OT. Dental procedures, primarily limited to caries control, periodontal therapy, and oral surgical procedures, are performed according to patient's need and OT indication. Cancer patients may develop emergent and urgent conditions that require oral medicine evaluation and management, including mucositis, infections, complications related to jaw osteonecrosis, graft-versus-host disease, uncontrolled pain, and immunotherapy-related adverse events.

Forced quarantine of cancer patients, caregivers, and health professionals may result in undesirable delays of cancer treatment and exacerbation of oral side effects, which can worsen the



**FIGURE 1** Oral medicine visits at the three centers before and after declaration of stay-at-home orders



**FIGURE 2** This established patient with osteoradionecrosis of the right posterior mandible called the oral medicine service reporting new onset of right facial swelling and slight discomfort. Antibiotics and analgesics were prescribed, and the patient was scheduled for a virtual visit in 3 days. During the virtual visit, right facial swelling was noted and the patient reported no improvement, and now with painful spasms. The patient was immediately scheduled for an outpatient visit and panoramic radiograph demonstrated pathologic fracture of the mandible. The patient was seen urgently by a surgeon who prioritized the case as level 1 given operating room restrictions

disease prognosis (Werner, Carey, Albergotti, Lukens, & Brody, 2020). During the pandemic period, there has been a substantial decrease in patient visits. Our three centers provided a total of 3,154 oral medicine-related patient visits during the 6 weeks prior to stay-at-home orders, and 1,531 in the following 6 weeks (reduction of 51.5%) (Table 1, Figure 1). Patients who are in active OT have for the most part experienced only minor changes in their visits or treatment protocols (e.g., use of oral chemotherapy rather than an infusion to limit time at the cancer center).

However, patients who were not under active OT were encouraged to stay at home and their visits or dental procedures were postponed when possible. Virtual visits adopted by the centers represented only 1.4% of the total visits before quarantine (and only at one center), and it has increased to 17.3% during the stay-at-home period (Table 1, Figure 1). Virtual visits have greatly facilitated the provision of oral medicine care and support for both established and new consultations, allowing for effective triage of potentially urgent cases problems requiring immediate clinical attention (Figure 2). Telemedicine/dentistry or telehealth has been used to facilitate patient-professional communication and has been widely and effectively incorporated into oncology care (Schrag, Hershman, & Basch, 2020; Villa, Sankar, & Shiboski, 2020).

A finding that was noted early in the pandemic for all centers was that some symptomatic oncology patients complaining of classic oral complications (e.g., xerostomia, mucositis, taste changes) would also screen positive for the signs and symptoms of COVID-19 (e.g., due to reporting a dry cough, related to xerostomia). Our centers have adopted measures for minimizing the risk of COVID-19 transmission between patients and health professionals. Screen-positive patients are isolated prior to assessment and in some cases swabbed for COVID-19. With these measures, the more limited operations have been safe and efficient, and there have not been outbreaks of cases among patients or staff.

In summary, our group has demonstrated various strategies, often coordinated at the institutional level, to maintain essential oral/dental care for cancer patients during the COVID-19 pandemic. We anticipate that there will be many lessons learned from this experience that will have the potential to improve access to oral medicine care for cancer patients in the future.

**TABLE 1** Total of oral medicine assessments in the three Cancer Centers during the 6 weeks prior and 6 weeks after the establishment of stay-at-home orders

Institutions	Activity	Weeks before						Quarantine	Weeks during					
		-6	-5	-4	-3	-2	-1		+1	+2	+3	+4	+5	+6
AC Camargo	Outpatient	253	236	212	147	147	237	03/09/2020	120	105	110	72	92	78
	Inpatient	151	136	162	112	110	111		110	106	76	49	71	67
	Virtual visit	—	—	—	—	—	—		—	—	—	—	—	—
Dana-Farber/ Brigham and Women's Cancer Center	Outpatient	26	19	41	39	18	19	3/23/2020	8	9	14	15	14	18
	Inpatient	17	10	6	7	6	4		4	2	5	4	4	3
	Virtual visit	—	—	—	—	—	—		2	2	4	4	7	7
North East Cancer Centre	Outpatient	146	134	129	104	149	208	3/23/2020	12	14	17	20	16	24
	Inpatient	1	4	2	3	2	2		3	4	4	4	0	1
	Virtual visit	13	9	17	0	1	4		0	106	56	25	10	33
All Institutions	Total of visits	607	548	569	412	433	585		259	348	286	193	214	231

Note: North East Cancer Centre was the only center that already offered virtual visits prior to the pandemic.



## KEYWORDS

COVID-19, oral medicine, pandemic

## CONFLICTS OF INTEREST

None to declare.

## AUTHOR CONTRIBUTIONS

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**Deborah Saunders:** Conceptualization; Methodology; Validation; Writing-review & editing. **Shaiba Sandhu:** Methodology;

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