

# The Impact of COVID-19 on Burn Care at a Major Regional Burn Center

## To the Editor:

The COVID-19 pandemic has had a profound global impact, not least on hospital functioning. Institutions have all had to prepare and adapt to a large number of admissions, and the influence on elective and emergency surgical services, including burn care, has been significant; it may be some time before we know the full extent of this.<sup>1-3</sup> While many centers were able to commence a semblance of normal activities for a while after a lockdown period, we are now seeing an exponential rise in cases again, with potentially catastrophic consequences for the provision of burn care.

Williams et al<sup>4</sup> and Greenhalgh<sup>5</sup> described increased burn center admissions, while Kruchevsky described decreased admissions overall, but increased levels in the pediatric and female demographic categories.<sup>3</sup> Keays et al<sup>6</sup> showed a remarkable reduction in traumatic injuries presenting to Montreal Children's Hospital, Canada.

A review of all admissions, operative cases, and clinic visits between April 1 and August 31, 2020 was undertaken at the Ross Tilley Burn Centre at Sunnybrook Health Sciences Centre in Toronto, which serves the adult population of the majority of Ontario, and is the largest in Canada. These data were compared with the same 5-month period in the preceding 2 years.

Selected data highlights are tabulated (Table 1). During the 5 months in question, fewer patients were admitted than the previous 2 years ( $N = 81$  vs a mean of 121). The mean total body surface area was slightly higher this year (13.7%), and the mean length of hospital stay longer (18 days). The

male-to-female ratio of admitted patients was considerably greater during the 5 months of 2020, at 2.9:1, compared to 1.7:1.

No significant differences in terms of etiology were detected, however, with flame burns and scalds comprising the majority of injuries, at a 2:1 ratio. As expected, clinic visits reduced dramatically by 50%, from a mean of 160 patient visits per month to just 81 per month, with the majority conducted virtually. During 2020, the operative cases were lower than previous years ( $N = 176$ ), but the mean duration was longer (190 minutes). The cumulative time utilized for burn surgery was similar (557 hours).

Although total admissions were reduced, the demands on Burn ICU bed resources and burn operating time were similar. The noteworthy increase in the male-to-female ratio of admissions suggests that factors predisposing males to greater risk of burn injury were exacerbated rather than reduced during this period, which warrants further investigation. The data support the notion that removing scheduled operating time for our service resulted in less efficient execution of acute burn surgeries and longer hospital stays. Although formal clinic visits were significantly reduced and were mainly conducted virtually, several patients benefited from the introduction of a novel and user-friendly email service, which increased access to our clinic nurse specialist and burn surgeons, despite reducing in-person visits.

As the "second wave" of the pandemic approaches in many countries, it is incumbent on us to reflect on our experience during the "first wave" in order to protect our operating time allocation, and continue to adapt to ensure timely, effective, and patient-centered in- and outpatient care.

**Table 1.** Selected burn center data comparing 2020 with 2019 and 2018

Year	Admissions (N)	Male:female ratio	Mean age (years)	Mean TBSA (%)	Mean hospital stay (days)	Surgeries (N)	Mean surgery time (Hours)	Cumulative operating time (hours)	Clinic visits (N)
2020	81	2.86	47.3	13.7	18	176	190	557	405
2019	117	1.72	46.7	13.1	15.5	184	171	524	824
2018	126	1.74	46.4	12	13.6	205	167	571	779


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## REFERENCES

1. Saha S, Kumar A, Dash S, Singhal M. Managing burns during COVID-19 outbreak. *J Burn Care Res* 2020;41:1033–6.
2. Hickerson WL. COVID-19 disaster response assessment. *J Burn Care Res* 2020;41:918.
3. Kruchevsky D, Arraf M, Levanon S, Capucha T, Ramon Y, Ullmann Y. Trends in burn injuries in Northern Israel during the COVID-19 lockdown. *J Burn Care Res* 2020. doi: [10.1093/jbcr/iraa154](https://doi.org/10.1093/jbcr/iraa154).
4. Williams FN, Nizamani R, Chrisco L, King BT. Increased burn center admissions during COVID-19 pandemic. *J Burn Care Res* 2020;41:1128.
5. Greenhalgh DG. Not all burn centers are quiet during the COVID-19 crisis “Trends in burn injuries in Northern Israel during the COVID-19 lockdown.” *J Burn Care Res* 2020. doi: [10.1093/jbcr/iraa164](https://doi.org/10.1093/jbcr/iraa164).
6. Keays G, Friedman D, Gagnon I. Injuries in the time of COVID-19. *Health Promot Chronic Dis Prev Can* 2020;40:11-2 [English, French].

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