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## Challenges and countermeasures in the prevention of nosocomial infections of SARS-CoV-2 before resumption of work: Implications for the dermatology department

*To the Editor:* Recently, the number of new severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections in China has been decreasing. At manuscript preparation, new cases had not been reported in Wuhan since March 18, 2020.[1] As health care systems resume routine clinical activities, implementation of robust infection control measures to prevent nosocomial transmission of SARS-CoV-2 remains a top priority.[2]

Our dermatology department is in Wuhan, the area first and worst affected by coronavirus disease 2019 in China. We aim to share our experiences in this unique position by outlining our infection control plan. We hope that it can serve as guidance for dermatology departments and the health agencies overseeing them.

In the early days of the outbreak, high rates of nosocomial SARS-CoV-2 infections were observed in health care workers. More than two-thirds of infected health care workers had contracted the virus in units without known coronavirus disease 2019 patients.[3] We suspect that covert carriers of the virus may have contributed to this unchecked nosocomial spread; Qiu[4] reported that 60% of infections may be asymptomatic. By remaining cognizant of this risk, even in departments not directly involved in treatment of coronavirus disease 2019, we devised the following infection control plan for our dermatology clinic:

First, an experienced infection control expert team was established. This team took responsibility for training and managing health care workers, including hand hygiene and the proper use of personal protective equipment (Supplemental Material 1 available via Mendeley at https://data.mendeley.com/datasets/s3ncfct2z8/1), as well as monitoring their state of health. We also held emergency simulations outlining protocols for inpatient dermatology admissions and consultations, as well as contingency plans for exposure to SARS-CoV-2–infected patients or health care workers in dermatology clinics.

Next, the department was divided into clean, potentially contaminated, and contaminated zones. The potentially contaminated and contaminated zones were separated by 2 buffer zones (Fig 1). Patients and staff were to use separate passageways. Before entering the designated patient care area (contaminated zone), staff would don personal protective equipment in the clean zone. On exiting the contaminated zone, they would follow a series of transitions before returning to the clean zone. In the first buffer zone, they doffed personal protective equipment (except working clothes, N95 masks, goggles, and caps). Then they entered the potentially contaminated zone to remove the remaining items. Next, they transitioned to the second buffer zone, where they donned a new surgical mask. Only then did they enter the clean zone. This functional and geographic division of the clinics and wards was designed to minimize the risk of cross contamination. By sanitizing and washing hands in each zone and using adequate personal protective equipment for all patient encounters, we lessened the risk of nosocomial transmission.

Finally, all employees were required to achieve 100% on a written examination (Supplemental Material 2). Thirty-five staff members completed the test (response rate 100%). Because of the relatively low accuracy rate of personal protective skills (82.04%) and division of work area (84.28%) (Fig 2), some dermatology staff received additional training.

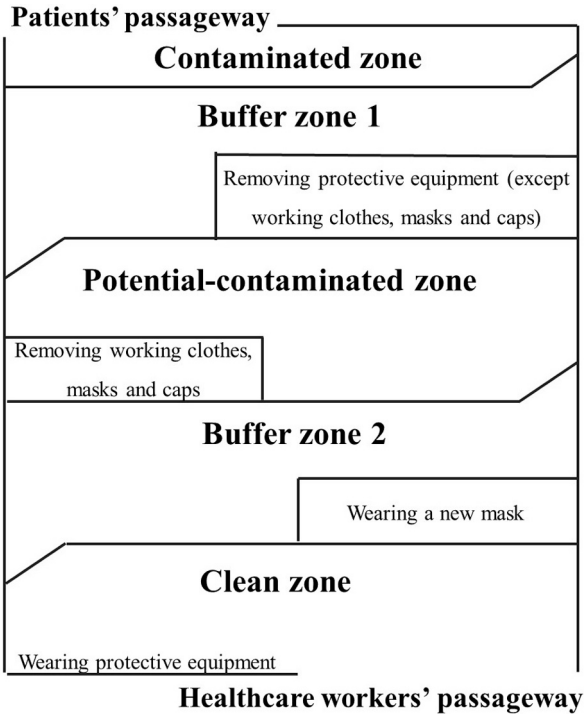


**Fig 1.** Schematic diagram of zones in the dermatology clinic and ward.

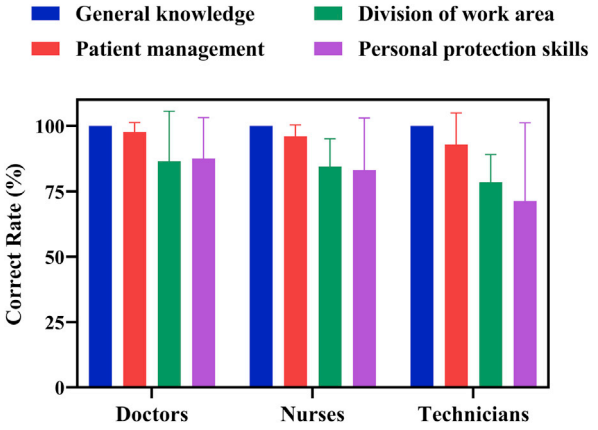


**Fig 2.** Online examination scores for doctors, nurses, and technicians in the department of dermatology.

In the fight against future outbreaks, infection-prevention strategies take precedence.[2] Dermatologists should be trained in these measures, and clinics should be modified to minimize the risk of nosocomial transmission.

We want to express our deep respect for all the first-line health care workers for their dedication in the fight against SARS-CoV-2 and thank the health care workers who participated in this study.

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## Analysis of dermatology-related search engine trends during the COVID-19 pandemic: Implications for patient demand for outpatient services and telehealth

*To the Editor:* Amid the coronavirus disease 2019 (COVID-19) pandemic, dermatologists face the challenge of providing care while adhering to guidelines established by the Centers for Disease Control and Prevention. The American Academy of Dermatology has advised limiting nonessential in-person visits[1] and provided guidance to accelerate telehealth services.[2] However, little is known regarding how the dermatologic needs of patients have evolved during this public health crisis. The objective of this study was to use the Google Trends search volume index, a normalized value from 0 to 100, to examine patient interest in skin conditions and procedures during the COVID-19 pandemic.

Google Trends search volume index data have been shown to describe patient interest in dermatologic issues.[3,4] We divided common search queries into 3 categories: general dermatology conditions (ie, acne, eczema, seborrheic dermatitis, psoriasis, hair loss, rosacea, dry skin, hives, and atopic dermatitis), premalignant and cancerous conditions (ie, melanoma, squamous cell carcinoma, basal cell carcinoma, and actinic keratosis), and cosmetic procedures (ie, Botox, laser treatment, laser therapy, chemical peel, dermabrasion, lip filler, and fillers). The primary outcome was the mean search volume index during 3 intervals: prepandemic (April 28, 2019, to March 8, 2020), the onset of national stay-at-home orders (March 15, 2020, to March 29, 2020), and the ongoing social distancing period (April 5, 2020, to the present). The Centers for Disease Control and Prevention restricted public gatherings on March 15, 2020, and stay-at-home orders were rolled out between March 23, 2020, and March 30, 2020. Two-tailed unpaired *t* tests were used for continuous variable comparisons (GraphPad Prism 7, GraphPad, San Diego, CA).

Significant decreases in search volume index were observed between the prepandemic period and the onset of stay-at-home orders for general dermatologic conditions (82.6 vs 71.9; $P < .001$), premalignant and cancerous conditions (77.6 vs 47.9; $P < .001$), and cosmetic procedures (71.8 vs 45.1; $P < .001$) (Table I). In contrast, only interest in general dermatologic conditions has returned to baseline during the ongoing social distancing period, whereas premalignant and cancerous conditions and cosmetic procedures showed persistently low search volume index (Table I and Fig 1).

Our findings suggest that public interest in dermatologic conditions and procedures has been influenced by the events of the pandemic. Although stay-at-home orders and the rapid spread of disease in mid-March reduced all categories of online searches, only general dermatologic conditions demonstrated a return to prepandemic levels of interest. It is possible that visits for these chronic, less urgent conditions—such as acne, rosacea, and seborrheic dermatitis—are more likely to be postponed or canceled amid the limitations of

**Table I.** Comparison of mean search volume indices of general dermatologic conditions, precancerous and malignant conditions, and cosmetic procedures during key intervals throughout the COVID-19 pandemic

| | April 28, 2019, to March 8, 2020, | March 15, 2020, to March 29, 2020 | | April 5, 2020, to April 19, 2020 | |
|---|---|---|---|---|---|
| | Mean (SD) | Mean (SD) | *P* value* | Mean (SD) | *P* value* |
| General dermatologic conditions | 82.6 (10.1) | 71.9 (6.6) | <.001 | 84.5 (8.2) | .31 |
| Precancerous and malignant conditions | 77.6 (11.0) | 47.9 (7.3) | <.001 | 50.3 (6.8) | <.001 |
| Cosmetic procedures | 71.8 (12.5) | 45.1 (9.5) | <.001 | 49.8 (14.0) | <.001 |

*SD*, Standard deviation.
*Mean search volume indices from these periods were compared with the prepandemic search volume index (April 28, 2019, to March 8, 2020), using 2-tailed unpaired *t* tests.