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ADVANCES IN COSMETIC SURGERY

Cosmetic Practices in the COVID-19 Era

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KEYWORDS

• COVID-19 • Cosmetics • N95 respirators • Masks • Social distancing • Transmission • SARS-CoV-2 • Scheduling

KEY POINTS

- Stay up-to-date with federal, state, and local health authority regulations regarding elective procedures.
- Practices should err on the side of caution and continue rigorous screening protocols with additional safety measures for the foreseeable future.
- Personal protective equipment should be escalated according to the transmission risk of SARS-CoV-2 during the cosmetic/elective procedure.
- Utilization of televisits for cosmetic consults followed by a short in-person appointment to proceed with the treatment plan may be useful even in the post-pandemic cosmetic practice.

INTRODUCTION

The COVID-19 pandemic has dramatically changed the medical aesthetic practice. From impacting patient volume, to altering cosmetic trends, to necessitating reconfiguration of office protocols to promoting social distancing, COVID-19 has unquestionably affected the day-to-day experience for both providers and patients. Although some of these changes are likely transient, others may develop into long-term trends. This article discusses pertinent studies on severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) transmission, shares some helpful tips for managing a cosmetic practice during COVID-19, and gives an overview of some of the current trends and guidelines that have emerged during the pandemic.

THE SCIENCE BEHIND TRANSMISSION, MASKS, AND VENTILATION

Transmission of Severe Acute Respiratory Syndrome Coronavirus 2

SARS-CoV-2, the causative agent of COVID-19, is primarily transmitted through respiratory droplets and aerosols (fine solid particles or liquid droplets suspended in air or another gas); however, other routes of transmission, including body fluid routes, and fecal-oral transmission, may rarely occur [1,2]. High viral loads of SARS-CoV-2 have been detected in oral fluids of both symptomatic and asymptomatic COVID-19–positive patients [3,4], and speech and other vocal activities, such as singing, have been shown to generate aerosolized viral particles. The rate of

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emission of viral particles typically corresponds with voice loudness, but a small fraction of individuals behave as "speech superemitters," who consistently release an order of magnitude more particles than their peers because of higher levels of surfactant in their lungs [5]. Normal speaking produces thousands of oral fluid droplets with a broad distribution of size (1 μm to 500 μm). Whereas large droplets fall quickly to the ground, small droplets can dehydrate and linger as droplet nuclei (≤5 μm in diameter) in the air, where they behave like an aerosol and expand the spatial extent of emitted infectious particles [6]. These smaller aerosolized particles are of particular concern because they can remain airborne indefinitely under most indoor conditions unless they are removed by air currents or dilution ventilation. These small, aerosolized particles can also be inhaled into the lower-respiratory tract [7,8].

When aerosolized particles are inhaled, the virus is introduced to the host. Although there are no hard data showing exactly how many SARS-CoV-2 viral particles are needed for someone to become infected with COVID-19, some have estimated it to be as low as 1000 particles. Theoretically, the risk of becoming infected is therefore a combination of amount of virus someone is exposed to and the time of that exposure. This combination would obviously vary significantly from individual to individual. It is estimated that simple breathing releases roughly 20 viral particles a minute into the environment, so it would take roughly 50 minutes of an unprotected encounter with an infected individual in an enclosed space to reach the 1000 viral particles to become infected. If someone is speaking, the number of viral particles released increases roughly 10-fold to about 200 particles per minute. That would decrease the threshold exposure time down to about 5 minutes in the same environment. If an infected individual is shouting or singing, the release of viral particles is even greater, and a cough or sneeze can release upwards of 200,000 viral particles instantly [9]. It has also been shown that greater viral loads are associated with lower survival probabilities [10,11].

Given these findings, this transmission risk of SARS-CoV-2 is especially high when people converse in enclosed spaces with poor ventilation for extended periods of time [12]. One way to decrease this risk during patient encounters is to limit speaking between patient and providers especially during facial procedures that require the removal of patient masks [13]. Other ways to decrease transmission, such as proper mask wearing and ventilation, are discussed later.

Masks and Respirators

There has been a significant amount of misinformation regarding masks and respirators throughout the pandemic, which is most likely due to a lack of understanding regarding the engineering of these products. The filtering capacity of masks, respirators, and respirator cartridges is denoted by a letter and numeric value. Filters are marked as either N, R, or P. The filters marked N are not resistant to oil; R are somewhat resistant to oil, and P are strongly resistant to oil. The number associated with each filter denotes its filtering capacity for particles 0.3 μm in size. Hence, respirators with N95 filtering capacity are nonresistant to oil and can filter out 95% of 0.3-μm particles [14].

SARS-CoV-2 is an enveloped virus with an approximate diameter of 0.1 μm. Although this is smaller than 0.3 μm, previous studies showed N95 respirators can filter ∼99.8% of viral particles with a diameter of 0.1 μm [15]. The reason N95 respirators can successfully filter these smaller viral particles is 2-fold. First, viral particles, such as SARS-CoV-2, are often produced bonded with biological materials, such as water or mucus; this larger bonded particle is easily filtered by an N95 respirator. Second, in addition to acting as a net that filters out particles greater than 0.3 μm, N95 respirator fibers can trap very small particles via electrostatic attraction [16]. The trapping of small molecules is facilitated by the random motion patterns that such small particles exhibit (Brownian motion) [17]. It is important to note that reuse of N95 respirators can lead to the dissipation of these electrostatic charges, hence reducing the filtering capacity of the respirators with prolonged use.

Although N95 respirators are the ideal face covering for both self-protection and protecting close contacts, cloth and surgical masks can also be effective in decreasing transmission. Although cloth and surgical masks are primarily protective against droplet particles (>5 μm), evidence suggests they may reduce viral aerosol shedding and thus help with source control [18,19]. Generally available household materials have a filtration rate between 49% and 86% for exhaled particles 0.02 μm in size, whereas surgical masks have a filtration rate between 75% and 89% for the same sized particles [20,21]. Using laser-light scattering, a recent study demonstrated that virtually no droplets were "expelled" with a homemade mask consisting of a washcloth attached with 2 rubber bands around the head. The same study demonstrated significant viral levels were expelled without a mask [22]. It was estimated that if at least 60% of the population wore masks that were 60% effective in blocking viral transmission (eg, a well-fitting, 2-layer cotton mask), the epidemic could be significantly mitigated [23,24]. Therefore, both patients and providers should at a very minimum wear a surgical mask or a cloth mask at all times. Given patients may arrive with poorly sealed masks or homemade masks with variable filtering capacities, it may be ideal to provide patients with new surgical masks before check-in to wear during their appointment.

Ventilation

The Centers for Disease Control and Prevention (CDC) recently posted guidelines stressing the importance of improving ventilation in office buildings. The recommendations included the following: (1) increasing the percentage of outdoor air (eg, using economizer modes of heating, ventilation, and air conditioning operations) potentially as high as 100%; (2) considering using natural ventilation (eg, opening windows if possible and safe to do) to increase outdoor air dilution; (3) increasing air filtration to high as possible (minimum efficiency reporting value 13 or 14); and (4) considering using portable high-efficiency particulate air [HEPA] fan/filtration systems to enhance air cleaning, especially in higher-risk areas [25,26]. A low-cost air purifier with a HEPA system costs approximately $100, can circulate air in a 155-square-foot room 5 times per hour, and can be easily widely deployed though clinic spaces [27].

The importance of natural ventilation is exemplified by a recent investigation of SARS-CoV-2 transmission among bus riders in Eastern China in January 2020. This cohort study examined a community of 128 lay Buddhists from the Zhejiang province who took 2 buses (60 on bus 1 and 68 on bus 2) on a 100-minute trip to attend a 150-minute worship event. The source patient was a passenger on bus 2. In both buses, central air conditioners were in indoor recirculation mode. Not surprisingly, 24 of the 68 individuals on bus 2 were later diagnosed with SARS-CoV-2 infection, whereas none of the 60 individuals in bus 1 were infected. Passengers sitting closer to the index case did not have a statistically significant higher risk of COVID-19 than those sitting farther away. However, all passengers sitting close to a window remained healthy, with the exception of the passenger sitting next to the index case [28].

Recirculation of indoor air is not thought to be sufficient to decrease transmission, as demonstrated by an outbreak at a training workshop in Hangzhou city, Zhejiang province. Thirty attendees from different cities attended the workshop, which consisted of four 4-hour group sessions in 2 closed rooms of 49 m^2 and 75 m^2. An automatic timer on the central air conditioners circulated the air in each room for 10 minutes every 4 hours using "an indoor recirculating mode." Although none of the workshop participants were symptomatic during the workshop, 15 of them were diagnosed with SARS-CoV-2 infection shortly after the conclusion of the workshop [29].

Upper Room Disinfection Using UV-C

During the COVID-19 pandemic, UV-C has gained significant popularity as a method of disinfection against SARS-CoV-2. Briefly, UV-C (254 nm) photons are absorbed by microbial nucleic acids, leading to the formation of cyclobutane pyrimidine dimers and the release of reactive oxygen species, which damage the microbial DNA, preventing replication and inactivating the microorganism [30]. Nardell and Nathavitharana [31] made the argument that upper-room disinfection by UV-C coupled with adequate ventilation can significantly reduce the risk of contracting COVID-19. In line with this, the CDC stated in their recent guidelines that UV germicidal irradiation (UVGI) could be considered a supplement to help inactivate the virus [25]. When used correctly, UVGI can be performed without an increase in the incidence of UV-C overexposure side effects, such as eye and skin irritation [32–35].

In addition to being used in public and high-traffic areas, upper-room UVGI may be used to reduce risk of viral plume during certain laser procedures. The fixtures are typically mounted at least 7 feet above the ground, with at least 1 foot of space above the fixture for decontamination to occur. Upper-room UVGI is typically recommended when ventilation rates are low, because when ventilation rates are greater than 6 air changes per hour, it may be less effective in comparison to particle removal by ventilation because particles may have less residence exposure time to UV-C [35].

OFFICE PROTOCOLS AND GUIDELINES IN THE COVID-19 ERA

Screening of Patients and Health Care Personnel

Screening measures and protocols will continue to evolve as community prevalence of COVID-19 changes. Screening has become ubiquitous in the pandemic era (Fig. 1 provides an example of a screening protocol), and although current screening methods are able to detect symptomatic and high-risk individuals, it still remains an imperfect barrier to spread [36]. Mathematical models have demonstrated that screening misses approximately half of the infections in a growing pandemic because of the high percentage of newly

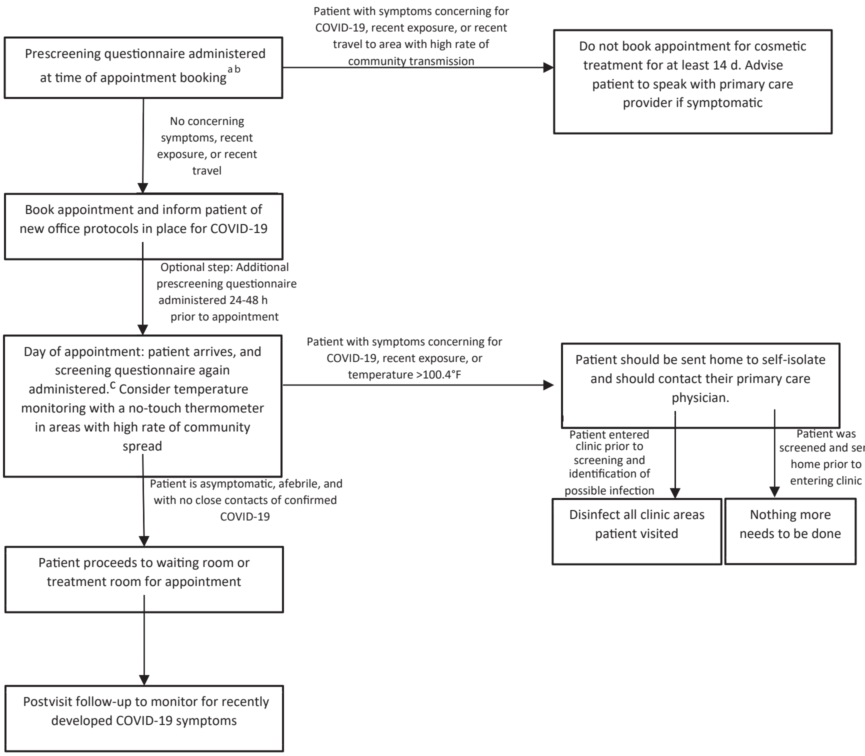

FIG. 1 Patient screening protocol for a cosmetic outpatient practice. [a] For elective aesthetic surgical procedures, the ASPS recommends preoperative reverse transcription polymerase chain reaction testing for acute infection when available. This should be scheduled at the time of patient booking. [b] Screening questionnaires should be tailored to current CDC guidelines and should focus on symptoms, travel history, and recent sick contacts. [c] Ideally, in-person screening stations should be set up outside the clinic or in a contained area designated for screening to minimize interactions before clearance.

exposed asymptomatic patients still in the incubation period. In addition, the sensitivity of thermal scanners [37] and lack of truthful self-reporting on screening questionnaires can decrease the ability of screening protocols to detect cases [38]. Despite these faults, screening questionnaires and noncontact thermal scanners (Fig. 2) can detect a proportion of active infections, and as the pandemic decelerates and there are less newly exposed individuals, screening should become more sensitive. Therefore, especially in the cosmetic setting whereby procedures are elective, practices should err on the side of caution and continue with rigorous screening protocols in parallel with additional safety measures for the foreseeable future.

Regarding staff screening, the Aesthetic Society COVID-19 Safety Task Force [39] recommends all staff members have their temperatures taken and recorded at the start of the day. A short questionnaire should also be administered to staff daily requiring self-attestation that they are asymptomatic and unaware of any sick contacts [40]. Staff should be reminded frequently that sick-leave policies are flexible and to not report to work if they even think they may be symptomatic. Although in the past some offices may have set up a culture in which it was acceptable to work through a cold, today this cannot happen, and all efforts must be made to encourage staff to stay at home if they have even the slightest symptoms.

Appointment Scheduling

Scheduling templates should be adjusted to minimize appointment lengths. Although the exact duration of exposure needed for transmission is unknown, brief interactions (<15 minutes) are less likely to result in transmission [41], and thus, appointment times should be scheduled for 10 minutes or less. Shortened appointment times should be discussed at the time of booking to help manage expectations and minimize

FIG. 2 Noncontact thermal scanners.

dissatisfaction. Patients should be encouraged to visit the clinic alone to avoid crowding in examination rooms [42]. Utilization of televisits for cosmetic consults followed by a short in-person appointment to proceed with the treatment plan can help minimize provider-patient interaction times and may be useful even in the postpandemic cosmetic practice.

In addition, scheduling templates should be adjusted to prolong the time in between patient visits. Longer periods of time between patient visits help to minimize the number of patients in an office at a given time and provides staff with sufficient time to clean the clinic rooms between patients. Although fomite transmission is not thought to be the main way SARS-CoV-2 spreads [43], an elevated level of cleaning and sanitization between patients should continue until further definitive data are acquired.

Avoidance of Waiting Rooms

The use of waiting rooms should be minimized in the era of COVID-19. This can be accomplished through implementation of new patient arrival protocols and through physical reconfiguration of waiting rooms (Figs. 3 and 4). Chairs should be spaced at least 6 feet apart, and touch points, such as reading materials, sample stations, and food/drink, should be removed [39,40]. Placing large stickers on floors spaced 6 feet apart can serve as a gentle reminder to patients to socially distance at check-in and checkout areas.

Patients should be instructed not to arrive more than 5 or 10 minutes before their appointments. Other measures, such as having the patient wait in their vehicle until a staff member is ready to receive and room them, can also be implemented. Online patient portals and e-communication for registration and paperwork

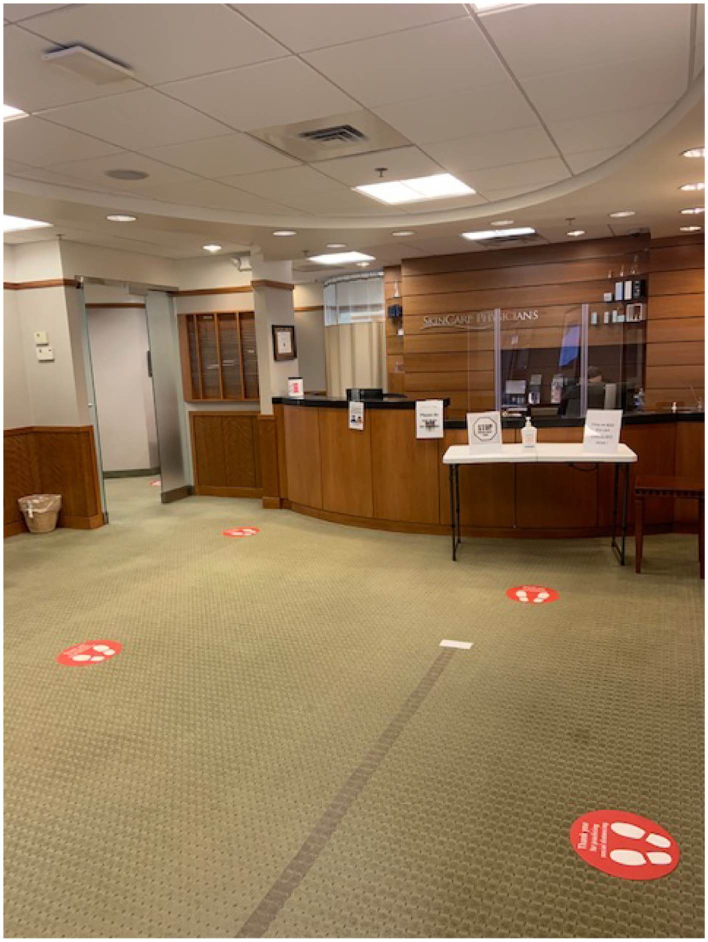

FIG. 3 Reconfiguration of waiting room to promote social distancing and minimize contact.

should be used to minimize patient contact. Furthermore, plastic/acrylic windows panels or glass partitions, especially in waiting rooms, should be used whenever possible to decrease staff and health care personnel (HCP) exposure [44].

With time, a slow transition to normalcy may be possible, but this transition should be gradual given the high-risk nature of waiting rooms (multiple potentially sick patients congregating in a small space with multiple touch points). Furthermore, consent forms for treatment may need to be modified to clearly state that there may be increased risks of acquiring SARS-CoV-2/COVID-19 in close proximity to doctors, nurses, or other patients, and that the patients understand these risks in relation to seeking any type of medical care in the COVID-19 era.

Social Distancing

The CDC recommends maintaining at least 6 feet of distance from others [45], and although unfeasible for practitioners and patients during cosmetic treatments, this rule should be implemented at all other times during a patient visit, including during check-in, during checkout, and in the elevators (Fig. 5). A systematic review and meta-analysis (that included data for SARS-CoV-2, SARS-CoV, and Middle East Respiratory Syndrome Coronavirus [MERS-CoV] found that transmission of viruses was lower with physical distancing of 1 m or more, compared with a distance of less than 1 m (n = 10,736, pooled adjusted odds ratio [aOR] 0.18, 95% confidence interval [CI] 0.09 to 0.38; risk difference [RD] −10.2%, 95% CI −11.5 to −7.5; moderate certainty); protection was increased as distance was

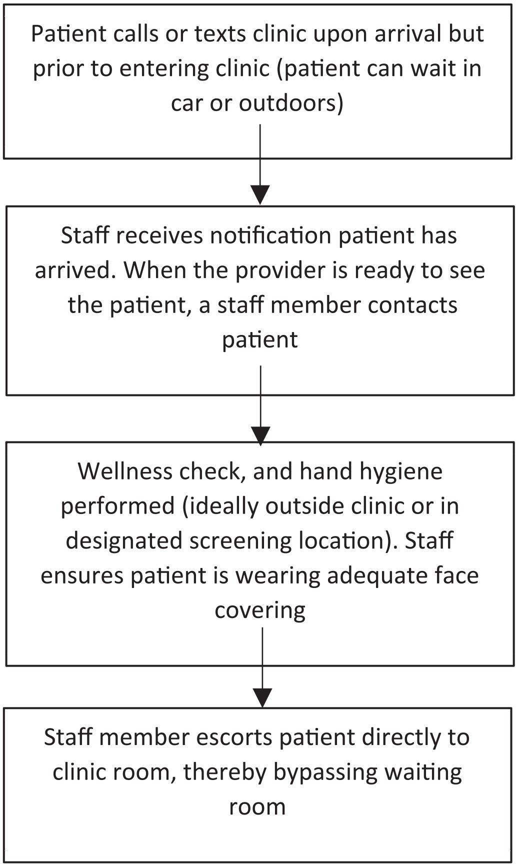

FIG. 4 A patient arrival protocol that bypasses the need for waiting rooms.

lengthened (change in relative risk [RR] 2.02 per meter; $p_{interaction} = 0\cdot041$; moderate certainty) [19]. There are currently no studies showing a beneficial effect of using larger examination rooms during patient encounters. However, use of larger rooms could be considered, if available, to help promote social distancing during portions of the patient visit that do not require close contact between the provider and the patient, such as initial history taking and patient education.

AN EXPOSURE OCCURS AT WORK—NOW WHAT?

What Is Classified as "an Exposure"?

Per CDC guidelines, an exposure in the health care setting is classified as an HCP who has prolonged[a] (≥15 minutes) close contact (<6 feet) with a COVID-19–positive person (either laboratory confirmed or clinically compatible) from 2 days before symptom onset until the infected person meets criteria for discontinuing home isolation [46].[b]

What Are the Work Restrictions and Quarantine Requirements for Asymptomatic Health Care Personnel with Severe Acute Respiratory Syndrome Coronavirus 2 Exposure?

Fourteen-day self-isolation and work restrictions are only required if both (1) an exposure occurs as defined above AND (2) the HCP was unprotected during the exposure (ie, HCP was not wearing a respirator or face mask, or the HCP was not wearing eye protection if the person with COVID-19 was not wearing a face mask) [46]. If, however, an exposure occurs and the HCP was protected (HCP wearing appropriate personal protective equipment [PPE] AND the infected individual was wearing a face mask), the CDC states that the HCP can continue work without need for quarantine or testing.

Should the Exposed Health Care Personnel Be Tested for COVID-19? Can Postexposure Testing Be Used to Allow Health Care Personnel to Return to Work Before 14 Days?

There are no set guidelines for postexposure testing in the health care setting. The CDC recommends considering testing an exposed, unprotected HCP using authorized nucleic acid or antigen detection assays if testing is readily available and result turnaround time is less than 24 hours [47]. However, the CDC recommends caution with using postexposure testing to allow an unprotected exposed HCP to return to work before 14 days given the potential for false negative results early in the disease course; if testing is pursued and the initial test is negative, repeat testing should be considered (Fig. 6).

[a]Any duration of exposure should be considered prolonged if the exposure occurred during an AGP.

[b]For mild to moderate illness in nonimmunocompromised patients with COVID-19, home isolation should be continued, and people should not return to work until (1) at least 10 days have passed since symptom onset; and (2) at least 24 hours have passed since last fever without the use of fever-reducing medications; and (3) symptoms have improved.

FIG. 5 Social distancing in elevators.

A Health Care Worker Develops a Fever and Cough—What Next?

If an HCP develops even mild symptoms consistent with COVID-19, they must cease patient care, notify their supervisor, leave work immediately, and self-isolate. These individuals should be prioritized for testing and should not return to work until they meet criteria for discontinuing home isolation [46] (see Fig. 6 for additional guidance).

PRECAUTIONS RELATED TO SPECIFIC COSMETIC PROCEDURES AND BODY SITE

Risk Stratification of Procedures

Kapoor and colleagues [42] classified various aesthetic procedures as low risk, moderate risk, and high risk based on the likelihood of transmission of SARS-CoV-2 from the patient to the treating HCP during the procedure. The risk stratification was based on the type of procedure being performed (aerosol-generating procedure [AGP] vs non-aerosol-generating procedure), body part on which the procedure is being performed (face/body), and the duration of the procedure. Additional considerations included contact with mucosa/saliva, body secretions during the procedure, and the ability of the patient to remain masked. Low-risk aesthetic procedures included injectables for the upper third of the face and extrafacial sites, injection lipolysis on extrafacial sites, cryolipolysis on the body, nonablative fractional resurfacing lasers for extrafacial sites, high-intensity focused ultrasound for extrafacial parts, radiofrequency tightening (RF) for extrafacial areas, platelet-rich plasma (PRP) therapy for scalp or body

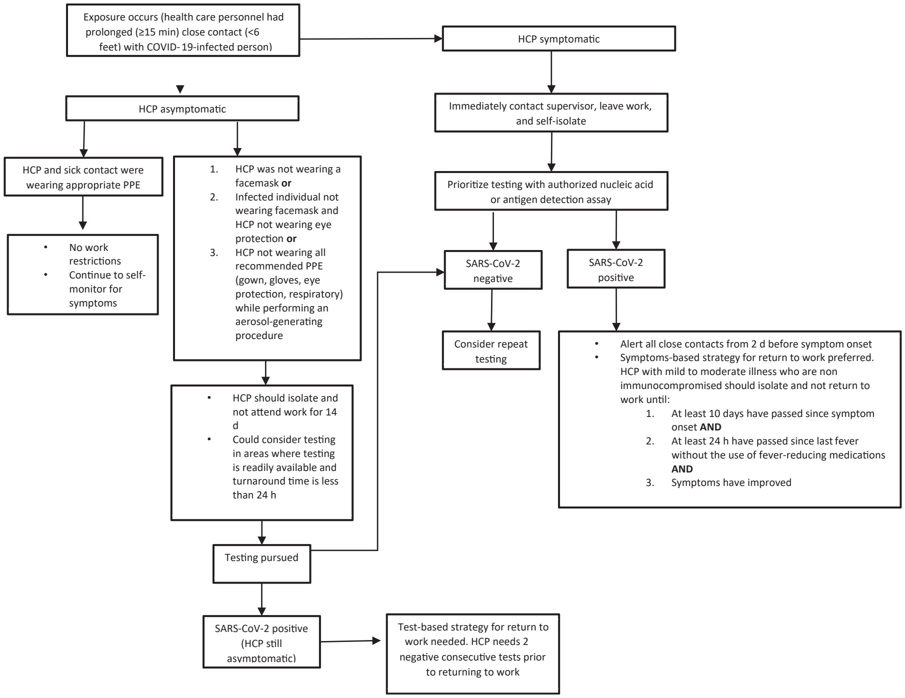

FIG. 6 Guidance for (1) HCP exposed to SARS-CoV-2 and (2) symptomatic HCP. (*Data from* Centers for Disease Control and Prevention. Information for Healthcare Professionals about Coronavirus (COVID-19). https://www.cdc.gov/coronavirus/2019-nCoV/hcp/index.html. Accessed August 22, 2020.)

areas, laser hair removal (LHR) of upper face and body areas with contact cooling device, low-level light therapy, chemical peels, body treatments with electronic muscle stimulator, intravenous injection therapy, sclerotherapy, and hydrafacial [42].

Moderate-risk aesthetic procedures included microneedling procedures (with or without RF) on the face and extrafacial sites, thread lifting on the face and extrafacial sites, invasive RF devices for face and extrafacial sites, soft tissue fillers in the lips, soft tissue fillers/PRP in the genital areas, and RF/lasers for genital area [42].

High-risk procedures included AGPs or plume-producing procedures, such as Q-switched Nd:YAG, alexandrite, ruby lasers, pulse-dye laser, ablative resurfacing lasers (fractional and nonfractional), LHR with noncontact cooling devices (generating plume), electrofulguration, electrocautery, microdermabrasion, jet infusions/facials, DermaJet devices, micropigmentation, microblading, and body treatments with plasma devices [42].

For all tiers, at the very minimum, disposable gloves and surgical masks should be worn. Although direct evidence is minimal, eye protection at all times is also recommended. During high-risk procedures, face shields should be used, and finally, during moderate- to high-risk procedures, an N95 respirator should be worn underneath a surgical mask [42]. See additional considerations based on body location and procedure in later discussion.

Head and Neck Procedures

Given procedures on the head and neck may be associated with increased risk of contracting SARS-CoV-2 compared with procedures below the clavicle [48], additional protective measures should be considered, such as the following: (1) elevating PPE to include N95 respirators and face shields [39,48]; (2) not having the patient speak while their mask is off to minimize risk of airborne transmission [6]; (3) keeping appointment times to a minimum (preferably under 10 minutes); and (4) using larger rooms given the size of a procedure room may influence risk of contracting COVID-19 [48].

The conjunctiva of the eye is easily exposed to infectious droplets and fomites during close contact with infected individuals and contaminated hands. A recent systematic review and meta-analysis (that included data for SARS-CoV-2, SARS-CoV, and MERS) found that eye protection was associated with lower infection (n = 3713; aOR 0.22, 95% CI 0.12–0·39, RD −10.6%, 95% CI −12.5 to −7.7; low certainty) [19]. Some respiratory viruses, such as human adenovirus and avian influenza virus (H7), frequently cause highly infectious conjunctivitis or keratoconjunctivitis. Hence, the conjunctiva is proposed to be an important portal of entry for respiratory viruses, and tear and conjunctival secretions may contain virus and spread viral infection [49,50]. Therefore, when working close to the face of a patient, wearing protective eyewear should be implemented.

Trunk and Extremity Procedures

Body-contouring procedures on the trunk and extremities, such as cryolipolysis, RF, and electromagnetic energy treatments, have the advantages of limited need for face-to-face contact between the provider and the patient, and no need for the patient to remove their mask during treatment. These procedures however often require lengthy appointments, so limited in-room contact with the patient once the treatment has begun and strict enforcement of mask wearing throughout the entire procedure (even when alone in a treatment room) will help reduce transmission risk.

Injectables

Procedures such as neurotoxin and dermal filler injections create exposure risk because of the close contact required between the provider and the patient, and the potential need for patient mask removal [40]. Injectable procedures involving the oral cavity or nose, such as central face filler, may be classified as AGPs, and appropriate elevation of PPE as described above should be used [51]. Although neurotoxin injections can typically be performed in less than 10 minutes, filler treatments to multiple areas may take longer, and a staged approach should be considered. Having the patient rinse their mouth with 0.5% hydrogen peroxide or 1% povidone-iodine immediately before procedures such as lip injections with soft tissue fillers may be considered [42,52].

Laser and Energy-Based Treatments

Caution should also be used during laser- and energy-based treatments because in addition to close contact and frequent need for patient mask removal, laser- and light-based devices can be classified as nonrespiratory AGPs owing to plumes containing aerosolized particles of blood and skin [53]. It has been demonstrated that thermal disruption of viable human cells results in the release of carbon particles, virus, bacteria, DNA, and toxic gases in all surgical plume with the exception of lower-powered lasers [54]. Although very uncommon, especially in asymptomatic patients, SARS-CoV-2 has been identified in both blood and skin of infected individuals [55,56]; although no studies have directly looked at SARS-CoV-2 transmission in relation to laser treatments, there is a theoretic risk. Use of plume evacuation systems with filters that remove particulates as small as 0.1 μm, known as an ultralow particular air filter, may be considered [57].

It is uncertain if forced air-cooling increases risk of contracting COVID-19. During January 26 to February 10, 2020, an outbreak of 2019 novel coronavirus disease in an air-conditioned restaurant in Guangzhou, China involved 3 family clusters. Virus transmission in this outbreak could not be explained by droplet transmission alone. However, strong airflow from the air conditioner could have propagated droplets from table C to table A, then to table B, and then back to table C. Thus, the airflow direction prompted by the air-conditioned ventilation was consistent with droplet transmission [58]. Therefore, given the positive pressure nature of forced air-cooling devices, alternative pain control techniques during laser- and light-based treatments should be used [40,48].

Clinics should ensure protocols for adequate sanitization of laser tips, handpieces, and goggles between patients. For LHR, patients should be asked to shave at home before coming to the procedure to reduce contact time with staff [42].

Electrosurgery

Similar to laser- and light-based devices, plumes can be generated by electrosurgical procedures. Electrosurgery may be classified as nonrespiratory AGPs, and necessary precautions should be taken [59].

Microneedling, Microdermabrasion, Dermaplaning, Chemical Peels

Although these procedures may be performed outside a physician's office, they still necessitate adequate PPE given they are often performed in the perioral region and require prolonged patient contact time.

PATIENT VOLUME AND AESTHETIC TRENDS

During the height of the pandemic, many elective procedures were postponed, and some aesthetic-based practices were temporarily closed. Consequently, it is no surprise that the American Society of Plastic Surgeons (ASPS) anticipates a decrease in total number of cosmetic procedures in 2020 because of COVID-19. In addition to a decrease in number of procedures performed, patient interest waned as demonstrated by a recent analysis of

Google Trends, which showed a decrease in online searches for cosmetic procedures, such as "lip fillers" and "Botox," during March and April 2020. More recently, however, these searches have begun to increase and are now nearing pre–COVID-19 levels [60]. In addition, a recent national survey of more than 1000 people conducted by the ASPS showed that despite the COVID-19 pandemic, 49% of those who have not had plastic surgery previously would be open to cosmetic or reconstructive treatment in the future [61].

In the COVID-19 era, there appears to be a growing trend toward more minimally invasive cosmetic procedures that allow for minimal contact time and follow-up in health care facilities. According to the ASPS, of the most-requested treatments during telemedicine appointments, 65% were for botulinum toxin type A fillers (eg, Botox, Dysport, and Xeomin), and 37% were for soft tissue fillers (eg, Juvéderm, Radiesse, Restylane, Sculptra, and Belotero). Lip injections were still popular despite mandates for mask wearing in public [62], which may be explained by less patient concern with postprocedure erythema and bruising given mask wearing and cancellation of many social gatherings. In addition, the authors have anecdotally noticed an increasing number of patients who seek cosmetic intervention to improve their appearance on Zoom. This concern is reflected by Zoom's "Touch Up My Appearance" feature on its video conferencing service, which allows users to create "a softening effect to skin to minimize the visibility of imperfections" [62].

SUMMARY

Cosmetic clinical protocols, guidelines, and trends will undoubtedly continue to evolve based on COVID-19 community prevalence, transmission rates, and emerging scientific evidence. Although even stringent office protocols and safety measures are imperfect, erring on the side of caution and staying up-to-date with federal, state, and local health authority regulations regarding elective medical procedures can increase safety for both aesthetic patients and providers.

CLINICS CARE POINTS

- Patients, providers, and staff should wear a surgical or cloth mask at all times.
- Limit speaking between patient and providers particularly during facial procedures that require the removal of patient masks.
- The use of waiting rooms should be minimized in the era of COVID-19.
- Scheduling templates should be adjusted to minimize appointment lengths.
- The Centers for Disease Control and Prevention recently posted guidelines stressing the importance of improving ventilation in office buildings.
- All efforts must be made to encourage staff to stay at home if they have even the slightest symptoms.
- During moderate- to high-risk procedures, an N95 respirator should be worn underneath a surgical mask. During high-risk procedures, face shields should also be used.
- Especially in the cosmetic setting, where procedures are elective, practices should err on the side of caution and continue with rigorous screening protocols in parallel with additional safety measures for the foreseeable future.

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