



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

faculty-related posts highlighted their respective credentials, educational background, interests, and awards. Unique to this past application cycle, many programs advertised virtual opportunities for applicants, including virtual rotations/subinternships and open houses. Further, many accounts are also using Instagram features beyond grid posts, including reels, IGTV, Instagram live streams, and saving to the highlight reel.

Study limitations include its evaluation of only 1 social media platform, the inability to obtain data regarding the number of followers an account had at the time of a post, and that the features of Instagram including “highlights” and “stories” were not quantified (these tools last for only 24 hours unless saved by the user).

Policies in response to COVID-19 have significantly altered the dermatology residency application process and limited in-person interactions. In parallel, the utilization of Instagram by dermatology residency programs has considerably increased. A similar trend is observed in other specialties as well.⁴ Residencies are likely leveraging Instagram to showcase their respective programs and connect with applicants. These changes are valuable in combating the challenges presented by the pandemic and importantly spotlight the need to develop guidelines to ensure best use.

Gabrielle Schwartzman, BS, Azam Qureshi, MD, and Adam J. Friedman, MD

From the Department of Dermatology, The George Washington University School of Medicine and Health Sciences, Washington, District of Columbia.

Funding sources: None.

IRB approval status: Not applicable.

Reprints not available from the authors.

Correspondence to: Adam J. Friedman, MD, Department of Dermatology, the George Washington University School of Medicine and Health Sciences, 2150 Pennsylvania Avenue NW, Washington, DC 20037

E-mail: ajfriedman@mfa.gwu.edu

Conflicts of interest

None disclosed.

REFERENCES

1. Association of American Medical Colleges. Important guidance for medical students on clinical rotations during the coronavirus (COVID-19) outbreak. Accessed February 8, 2020. Available at: <https://www.aamc.org/news-insights/press-releases/important-guidance-medical-students-clinical-rotations-during-coronavirus-covid-19-outbreak>

releases/important-guidance-medical-students-clinical-rotations-during-coronavirus-covid-19-outbreak

2. Association of American Medical Colleges. Coronavirus (COVID-19) and the VSLO Program. Accessed February 8, 2020. Available at: <https://students-residents.aamc.org/attending-medical-school/article/coronavirus-covid-19-and-vslo-program/>
3. St Claire KM, Rietcheck HR, Patel RR, Dellavalle RP. An assessment of social media usage by dermatology residency programs. *Dermatol Online J*. 2019;25(1).
4. DeAtkine AB, Grayson JW, Singh NP, Nocera AP, Rais-Bahrami S, Greene BJ. #ENT: otolaryngology residency programs create social media platforms to connect with applicants during COVID-19 pandemic. *Ear Nose Throat J*. 2020. <https://doi.org/10.1177/0145561320983205>.

<https://doi.org/10.1016/j.jaad.2021.03.078>

COVID-19: A catalyst for innovative hybrid teledermatology workflows to increase access and improve patient care at a large group practice



To the Editor: In response to COVID-19 restrictions, we developed a hybrid photo- and video-based (“store-and-video evaluation” or “SAVE”) electronic health record Epic-integrated workflow (Fig 1) to rapidly transition a large multispecialty group from a completely office-based dermatology practice to one that can support virtual care. The SAVE approach addresses challenges associated with asynchronous/“store-and-forward” workflows (no real-time assessment, absence of patient-provider interaction, and unclear reimbursement strategies) and synchronous/“live interactive” workflows (logistical/execution challenges and poor image quality).¹⁻³ In 2018, only 14 United States teledermatology programs used photo-video workflows.⁴

This retrospective descriptive study conducted from 3/16/2020 to 8/31/2020 analyzed 74,411 dermatology cases (20.8% digital and 79.2% in-person; Fig 2) encountered by 89 providers to care for 46,024 patients. SAVE was the predominant digital encounter type (88.8%), followed by telephone/message encounters. At the initial pandemic peak (April 2020), SAVE encounters increased to 71.5% of all encounters (from 0% prior to 3/16/2020) and was sustained at 11.5% upon full-clinic reopening (June-August). Extrapolation of the 9.5% steady-state SAVE utilization (July-August) represents 21,385/year teledermatology consultations versus 263/year teledermatology consultations (range: 20-20,000) reported across United States programs.⁴ As 81% (n = 25) providers wanted to continue SAVE indefinitely, we speculate that the drop in virtual care from the peak utilization was because of postponed full-body skin examinations and familiarity with

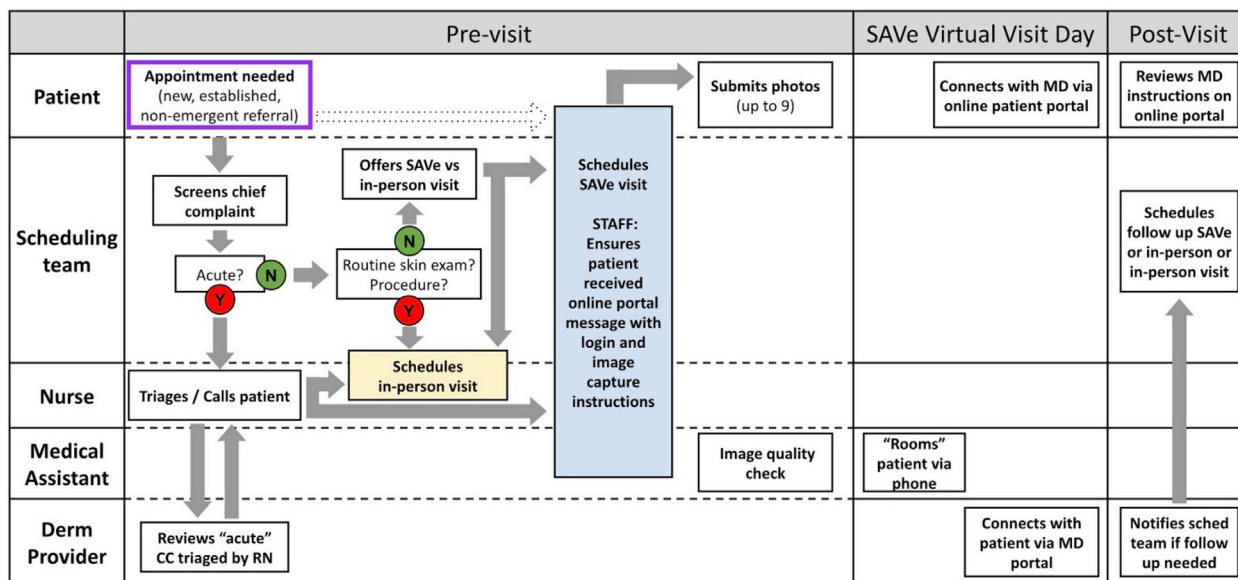


Fig 1. Schematic describing the journey of all key participants in the SAVe (“store-and-video evaluation”) workflow. The SAVe workflow is triggered by an appointment request from a patient or a physician referral. A scheduling team screens the chief complaint. If the concern is not acute (key words: rapidly growing, painful, bleeding, genital problem, blistering disease, draining pus) and is not concerning a full-body examination, the scheduling team offers a SAVe or in-person visit. SAVe encounters trigger the staff to send patient instructions for: (1) logging into an acceptable synchronous video platform and (2) taking and submitting suitable images using the EPIC patient portal. Majority of previsit communications are through the EPIC patient portal, with supplemental telephone support as needed. Prior to the scheduled visit, a medical assistant checks for the presence and quality of patient-submitted photographs (up to 9) and contacts the patient if additional photographs are required. Immediately prior to the encounter, the MA calls the patient to (1) ensure video connectivity, (2) intake history, and (3) “room” the patient. The patient and provider then connect via a video-capable platform (most commonly Vidyo integrated with EPIC). After the visit, the provider notifies the scheduling team if any additional in-person or virtual follow up is required. *Dotted white arrow* (in previsit patient box): Direct patient scheduling of SAVe visits started on 8/4/2020, allowing patients to bypass the scheduling team (staff screen patients’ chief complaints to ensure appropriateness for SAVe visits). *EPIC*, Epic Systems Corporation; *MA*, medical assistant; *SAVe*, store-and-video evaluation visit type.

traditional clinic visits once COVID-19 safety protocols were in place.

The implementation of SAVe increased access to dermatologic care. The wait time for referrals was shorter for SAVe (mean = 14.3 days) than for in-person (26.8 days, $P < .0001$) encounters. Despite significant staff reduction, the in-person referral wait times during the study period were shorter as compared with those in the 2019 timeframe (26.8 vs 56.4 days, $P \leq .0001$), possibly because SAVe encounters made more in-person appointments available.

During COVID-19, SAVe allowed for flexibility to match the needs of providers (with increased responsibilities as parents, spouses, and caretakers), patients (with fears of leaving the house), and clinics (with low personal protective equipment and strict spacing guidelines). One region’s safety protocols allowed only 3 of 12 available providers to be on site,

but SAVe enabled 9 additional providers to provide virtual care remotely. Since only 4.3% of SAVe required immediate (≤ 7 days) in-person follow up and $>80\%$ of SAVe visits were performed from home, clinic capacity was increased for required in-person evaluations/procedures.

Among patient demographics (Supplementary Table 1 available via Mendeley at <https://data.mendeley.com/datasets/mjt7fk9ps7/1>), the most striking difference was in age. Patients aged ≤ 30 years were more likely to use SAVe than those aged >65 years ($P < .0001$). This could be attributed to differences in ease with technology or chief complaints.⁵ Compared with in-person diagnoses, diagnoses performed via SAVe were more likely to be of rash (30% vs 24%, $P < .001$) and acne (17% vs 3%, $P < .001$, Supplementary Fig 1 available via Mendeley at <https://data.mendeley.com/datasets/mjt7fk9ps7/1>), which may be more amenable to

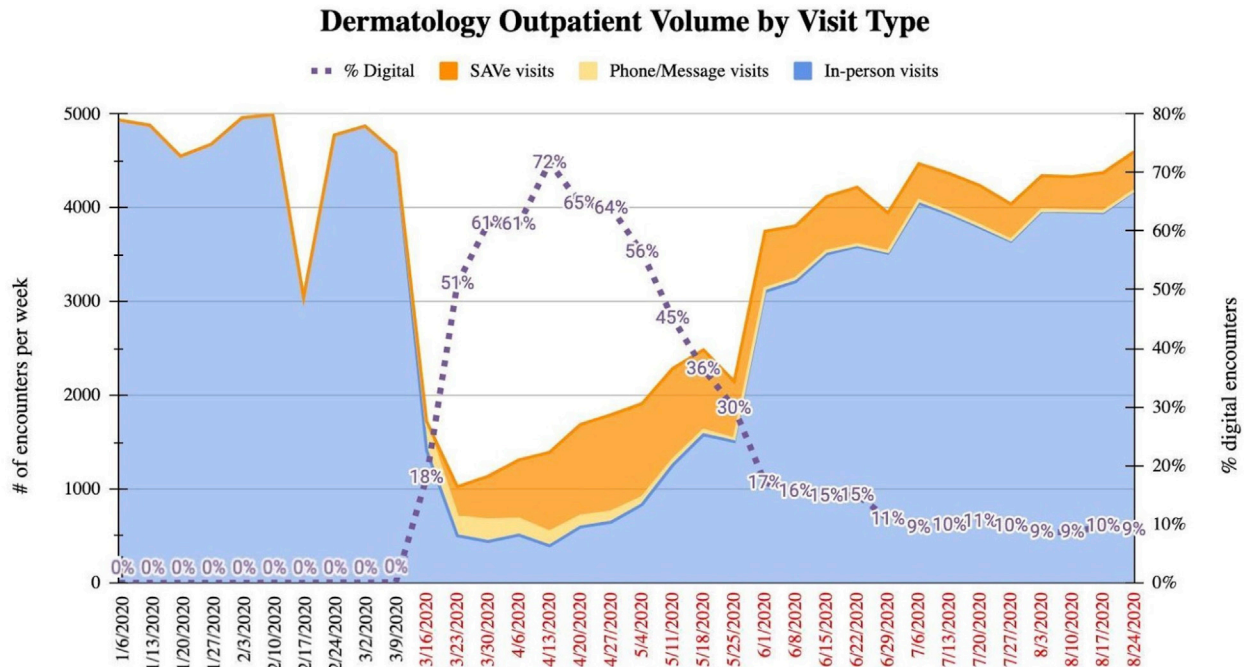


Fig 2. Dermatology outpatient volume based on visit type. Stacked area graph displays weekly volume of in-person encounters (*blue*), SAVE virtual encounters (*orange*), and telephone or messaging portal encounters (*yellow*) during pre-COVID-19 baseline period (1/6/2020-3/15/2020, dates in *black*) and after California shelter-in-place study period (3/16/20-8/31/20, dates in *red*). The *purple dashed curve* represents the percentage of digital encounters (SAVE + phone/message visits) of all encounters types. Among digital-only encounters, the SAVE ratios, compared with the telephone/message encounter ratios, rapidly shifted from 11%:89% during week 1 of shelter-in-place orders (3/16/20-3/23/20) to 61%:39% on week 2, followed by 78%:22% on week 4, and subsequently increased to an average of 94-95% SAVE visits compared with 4-5% telephone/message visits for the remainder of the observation period. Of note, in-person care availability was limited during March 16-May 31, 2020, because of pandemic-associated safety protocols, but tiered increases in-person capacity to pre-COVID-19 volume were in effect during June 1-August 31, 2020. SAVE, Store-and-video evaluation visit type.

virtual care. The most common in-person diagnostic category was growth (27% vs 10%, $P < .001$), which is more likely triaged to in-person evaluation.

SAVE was designed by and created for dermatologists to provide a secure and integrated teledermatology model to complement in-person workflows to preserve access and quality of care.

The authors thank Kathryn Martires, MD, and Kiana Aguilar, CMA.

Olga K. Afanasiev, MD, PhD,^a Dorothy Y. Hung, PhD, MA, MPH,^b Sherry Yan, PhD,^c Susan J. Huang, MD,^a and Bryan K. Cho, MD, PhD^a

From the Palo Alto Foundation Medical Group, Affiliated with Palo Alto Medical Foundation,^a Palo Alto Medical Foundation Research Institute, Center for Health Systems Research,^b and Sutter Center for Health System Research, Sutter Health, California.^c

Funding sources: This article was funded in part by the Center for Health System Research at Sutter Health.

IRB approval status: Ethical approval for this study was waived by the Sutter Institutional Review Board because it is a report of an experience with a new clinical tool implemented by the integrated healthcare system. Analyses for this study were covered under Sutter IRB determination of quality improvement and approval of healthcare utilization research (IRB protocol # 1592336).

Correspondence and reprint requests to: Olga K. Afanasiev, MD, PhD, 401 Old San Francisco Road, Sunnyvale, CA 94086

E-mail: afanaso@sutterhealth.org

Twitter: @olgafan

Conflicts of interest

None disclosed.

REFERENCES

1. Lee I, Kovarik C, Tejasvi T, Pizarro M, Lipoff JB. Telehealth: helping your patients and practice survive and thrive during the COVID-19 crisis with rapid quality implementation. *J Am Acad Dermatol.* 2020;82(5):1213-1214.
2. Perkins S, Cohen JM, Nelson CA, Bunick CG. Teledermatology in the era of COVID-19: experience of an academic department of dermatology. *J Am Acad Dermatol.* 2020;83(1):e43-e44.
3. Kazi R, Evankovich MR, Liu R, et al. Utilization of asynchronous and synchronous teledermatology in a large health care system during the COVID-19 pandemic. *Telemed J E Health.* 2020. <https://doi.org/10.1089/tmj.2020.0299>.
4. Yim KM, Florek AG, Oh DH, McKoy K, Armstrong AW. Teledermatology in the United States: an update in a dynamic era. *Telemed J E Health.* 2018;24(9):691-697.
5. McGee JS, Reynolds RV, Olbricht SM. Fighting COVID-19: early teledermatology lessons learned. *J Am Acad Dermatol.* 2020; 83(4):1224-1225.

<https://doi.org/10.1016/j.jaad.2021.03.098>

Race, ethnicity, and comorbidities are critical factors in the diagnosis of telogen effluvium during the COVID-19 pandemic



To the Editor: Since the arrival of COVID-19, cases of telogen effluvium (TE) have substantially increased.¹ In this study, we assess the influence of race, ethnicity, and comorbidities on the incidence of TE during the pandemic.

To analyze the occurrence of TE, the number of patients with this diagnosis were extracted from the combined patient volume evaluated by the dermatology departments of 8 safety-net hospitals in New York City. The incidence of TE between August 1, 2019, and February 29, 2020, (pre-pandemic) was compared with the incidence of this disorder between March 1, 2020, and October 1, 2020 (pandemic). Cases were filtered by COVID-19 positivity, demographics, and comorbidities. This study was exempted from IRB approval as only unidentifiable data was utilized (Slicer/Dicer, EPIC, WI).

From March 1, 2020, to October 1, 2020, 108 patients were diagnosed with TE (10 positive and 98 negative or untested for COVID-19) compared with 39 patients from before the pandemic, corresponding to a nearly 3-fold increased incidence during the pandemic (Fig 1). Although the extent of illness among our COVID⁺ cohort is unknown, it is notable that all but 1 (9/10) had underlying medical conditions that portend a more serious presentation of SARS-CoV-2² (Table 1). A prior case series of 10 individuals with TE subsequent to COVID-19 similarly

identified that a majority (8/10) had prior medical issues, suggesting that the presence of comorbidities in conjunction with COVID-19 positivity may increase one's risk of developing TE.¹ A larger sample size is needed to confirm this association.

During the pandemic, the number of cases of TE in Caucasians (n = 9) was similar to that identified before the pandemic (n = 8) (Fig 1). However, cases of TE increased significantly in Hispanic (65 pandemic >19 pre-pandemic) and other non-White individuals (31 pandemic > 8 pre-pandemic) in line with the disproportionate effect of COVID-19 on minority populations. Unexpectedly, there were only 3 diagnoses of TE in Blacks, a demographic also severely impacted by the pandemic. A paucity of cases of TE in Blacks (n = 4) was similarly noted before the pandemic compared with all other groups. Limitations include the possibility of coding errors and potential for inconsistencies in the diagnostic criteria of TE among hospital sites.

Although TE is one of the most common types of nonscarring hair loss, there is remarkably limited data on the epidemiology of this disorder. Notably, telogen percentage, density, and growth rate of normal hair show substantial variability among ethnicities.³ The microstructural appearance differs as well. In Whites and Asians, hair lost in grooming tends to be full-length with an attached root, whereas in Blacks, the root is more commonly lacking and there is longitudinal fissuring in the shaft suggestive of breakage.⁴ Hair loss disorders can also demonstrate ethnic and racial disparities. Blacks, for instance, are at increased risk for cicatricial alopecia,⁵ a trend we have similarly observed in our population (Supplemental Fig 1 available via Mendeley at 10.17632/gpjzxt7f2f.1). This demographic may have a decreased risk for other types of hair loss, such as TE, which may contribute to the paucity of cases noted in this group. A larger sample size is needed to investigate this hypothesis. Further research exploring the development and diagnosis of TE in diverse populations is also warranted.

Abigail Cline, MD, PhD,^{a,b} Ashley Keyes Jacobs, MD,^c Maira Fonseca, MD,^c Julia Wu, MD,^d Falguni Asrani, MD,^{e,b} Bijan Safai, MD,^a Sharon Glick, MD,^g Beth N. McLellan, MD,^f Amy J. McMichael, MD,ⁱ and Shoshana Marmon, MD, PhD^{b,e,b}

From the Metropolitan Medical Center, Department of Dermatology, New York, New York,^a the Coney Island Medical Center, Department of Dermatology, Brooklyn, New York,^b the Lincoln Medical Center, Department of Dermatology, Bronx, New York,^c the Elmhurst Medical Center, Department of Dermatology, Queens, New York,^d the