stage at baseline was 2.77. The mean reduction in Sinclair stage was 0.18 (6.5%) at 3 months, 0.47 (17.0%) at 6 months, 0.56 (20.2%) at 9 months, 0.68 (24.5%) at 12 months, and 0.80 (28.9%) at 2 years.

The results of this study support that oral bicalutamide has a favorable safety profile when used to treat FPHL. More than 95% of patients who started treatment with bicalutamide adhered to treatment. Thirteen patients discontinued the medication due to adverse effects, some of which may have been related to minoxidil rather than bicalutamide. In contrast to flutamide, the elevation in liver transaminases was mild in all cases. Bicalutamide can be considered as an antiandrogen in the treatment of FPHL. The use of concomitant medications and the retrospective design of this study limit the evaluation of efficacy.

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Patient-initiated online appointment scheduling: Pilot program at an urban academic dermatology practice

To the Editor: As health care becomes more technology driven, innovative strategies are being developed to improve the patient experience and access to care. One such tool is self-scheduling appointments online as an alternative to telephone scheduling.[1] The academic literature suggests that online scheduling promises to reduce no-show rates, appointment waiting times, and administrative burden, and improve patient satisfaction.[2] Our institution (Massachusetts General Hospital) recently enabled patient-initiated online scheduling functionality within the patient web portal. We wanted to explore the utility of this feature for our high-volume dermatology practice.

Between January 1, 2018, and July 31, 2019, 1303 established adult dermatology patients used online scheduling to book follow-up appointments. We performed a retrospective medical record review of these patients to evaluate demographics and use patterns and then compared them to patients who used traditional booking (telephone and in-person) to schedule follow-up visits during the same period.

Patients who used online scheduling were of similar race compared with patients who used traditional scheduling. Online schedulers were younger (mean [SD], 47.0 [15.9] vs 56.6 [18.9] years, $P < .0001$), and more were women (63.39% vs 59.11%, $P = .002$; Table I). Patients booked online at all hours of the day, with 45.82% (597 of 1303) doing so outside standard office hours (weekdays 8 AM-12 PM, 1-5 PM). Of patients who booked online, 71.91% (937 of 1303) used online web scheduling, and 28.09% (366 of 1303) used the mobile phone app. Patients who scheduled online had similar clinic attendance rates as those who booked traditionally

Table I. Patient demographics and use patterns for online scheduling vs traditional scheduling

Variable	Online scheduling (n = 1303)	Traditional scheduling (n = 116,659)	*P* value
Age, y			
Mean (SD)	47.0 (15.9)	56.6 (18.9)	<.0001*
Median	45.0	59.0	
	Percentage (No.)	Percentage (No.)	
Sex			
Female	63.39 (826)	59.11 (68,954)	.002†
Male	36.61 (477)	40.89 (47,705)	
Race/ethnicity			
White	86.49 (1127)	86.78 (101,239)	.618†
Black or African American	2.69 (35)	2.87 (3348)	
Hispanic or Latino	0.15 (2)	0.46 (534)	
Other‡	10.67 (139)	9.89 (11,538)	
Preferred language			
English	98.31 (1281)	96.19 (112,212)	<.0001†
Spanish	0.15 (2)	1.37 (1600)	
Other§	1.54 (20)	2.44 (2847)	
Scheduling details			
Web scheduling	71.91 (937)	N/A (…)	
Mobile app scheduling	28.09 (366)	N/A (…)	
Outside of phone window	45.82 (597)	8.69 (10,139)‖	<.0001†
Arrived/completed	56.64 (738)	55.97 (65,296)	.631†
Canceled	39.37 (513)	34.35 (40,069)	.0001†
No show	3.91 (51)	9.65 (11,257)¶	<.0001†
Left without being seen	0.08 (1)	0.03 (37)	.368†

N/A, Not applicable.
*The *P* value for the continuous variable (age) was calculated with the *t* test.
†*P* values for categorical variables were calculated using the χ^2 test with Excel software (Microsoft, Redmond, WA).
‡Other for online scheduling: Asian (n = 69), other (n = 43), declined (n = 10), unavailable (n = 17); other for traditional scheduling: Asian (n = 4471), other (n = 4584), declined (n = 1489), unavailable (n = 994).
§Other includes Arabic, Chinese-Mandarin, Japanese, Portuguese, Russian, and unavailable.
‖For traditional scheduling, outside of phone window includes patients who scheduled follow-up during monthly Saturday clinics or if initiated by scheduling staff outside office windows; these represent times when the phone lines are not open to incoming calls.
¶For traditional scheduling, no show includes those marked "scheduled" (meaning appointment was booked but encounter was not arrived, canceled, or completed). No show = 4829. Scheduled = 6428.

(56.64% vs 55.97%, $P = .631$). Those who booked online were less likely to no-show (3.91% vs 9.65%, $P < .0001$) and more likely to cancel their appointment (39.37% vs 34.35%, $P = .0001$).

Online scheduling provides access to administrative resources beyond office hours and is a promising adjunct to other tools enabled within the online patient portal (eg, prescription refill requests, messaging with providers, and notes/results viewing). Aligning with previous studies,[3] the no-show rate was lower among patients who booked appointments online. Interestingly, the attendance rate was similar between the groups, suggesting external factors play a larger role in patients' ability to keep their scheduled appointments than scheduling methodology; however, patients who directly scheduled online were more likely to proactively cancel their appointment, possibly due to greater ownership over the scheduling process or ease of an online cancellation process.

Patients who booked online were younger than those who used traditional scheduling, which could speak to a higher comfort level with technology or time constraints that made online scheduling more appealing to younger patients. With proper education, patients can be guided to the online portal to book, cancel, or rebook appointments, thereby reducing the administrative burden for office staff. By presenting this pilot study, we hope to encourage other colleagues to explore and share their experiences with patient-initiated online scheduling. More broadly, we wish to stimulate conversation among colleagues regarding implementation of technology to improve access to care.

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Facial lesion triangulation using anatomic landmarks and augmented reality

To the Editor: It is common for dermatologists to use photography for the purpose of biopsy-site identification. However, lack of standardization of photographs, absence of anatomic landmarks, scars from previous procedures, inadequate documentation, and poor image quality can make biopsy-site triangulation challenging.[1] Physicians and patients incorrectly identify 5.9% and 16.6% of surgical sites, respectively.[2] Proper photography can be helpful in accurate biopsy-site identification.[3] Here, we describe the use of facial recognition and augmented reality to provide lesion triangulation.

This study was granted approval by the Columbia University Irving Medical Center institutional review board. Residents and medical assistants from the Department of Dermatology at Columbia University were recruited to participate (n = 5; 27 to 58 years). A circular green 1.27-cm-diameter sticker was placed at 2 different locations on the participant's left and right cheeks, resulting in a total of 4 simulated lesions per participant. At each sticker location, the distance from the center of the green sticker to the lateral canthus, nasal ala, and oral commissure was measured by 2 authors (D.T. and N.K.A.) using a ruler. A series of images of each participant's face was captured with a handheld rear-facing smartphone camera, which recorded 1080 pixels at 30 frames per second for 10 seconds. The distance between the camera and the participant was varied between approximately 1 and 5 feet to simulate photography during a clinical encounter. Computer code was written in Python[4] with the OpenCV computer vision library. A 68-landmark facial detector[5] was used to recognize facial landmarks. Measurements from the center of the sticker to the lateral canthus, nasal ala, and oral commissure were generated by the algorithm and displayed virtually in the image. The first 200 frames that fulfilled computer screening parameters (which included a minimal sticker radius of at least 5 pixels, less than a 15% ratio between the left and right eye width to limit the effect of axial plane rotation, and less than a 30% ratio between the vertical location of the lateral canthus of each eye to limit the effect of sagittal plane rotation) were used for analysis. The algorithm is demonstrated on a female mannequin in Fig 1 and on one of the participants in Fig 2.

A total of 20 simulated lesions, 4000 images, and 12,000 computer-generated measurements were analyzed. The largest absolute error between the average of the 2 human measurements and the computer-generated measurements for all simulated lesions on the cheek was 1.55 cm. Of the computer-generated measurements, 95.25% were within 1 cm of the average of the human measurements. This study suggests that the use of facial recognition and augmented reality in the outpatient setting has the potential to reduce medical errors and wrong-site surgery by allowing dermatologists to accurately triangulate biopsy sites.

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