

BRIEF COMMUNICATION

Meeting Dermatologic Needs in an Uninsured Population: Lessons Learned from a Referrals Cohort at a Student-Run Free Clinic

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Unmet dermatologic needs of the uninsured patient population are important to identify and address, especially as the COVID-19 pandemic has introduced additional barriers of access to care. We describe the successful collaboration between a student-run free clinic and dermatology practice since 2012, highlighting excellent time to appointment intervals and resolution rates as well as the associated modest financial cost. We believe that the information provided in our report may serve as a proof of concept and facilitate the implementation of such collaborations throughout the United States.

INTRODUCTION

Disparities in outcomes of cutaneous malignancies may be compounded by the increasing incidence of skin cancers [1-2]. Furthermore, data suggests that uninsured patients may experience significant barriers to accessing dermatologic care, as despite making up a substantial percentage of the general population, these patients make up a smaller fraction of the panels at dermatology practices [3]. Diagnostic delays alongside issues of uninsured access present an important yet poorly understood burden of disease that is especially relevant today given the ongoing pandemic. Student-run free clinics are an important resource for bridging the gap in coverage, but one of the largest surveys on the topic to date demonstrated

that dermatologic care is not routinely provided as a core service of these organizations [4]. A handful of models for providing dermatology services have been described in the literature, including: faculty-supervised screening clinics with one follow-up appointment free-of-charge at the resident community clinic [5]; student-run free clinics and University health system collaborations where free specialty consultations are provided on a quarterly to monthly basis by volunteer dermatologists through internal referrals [6] or after free skin cancer checks [7]; and monthly dermatology nights for specialty procedures as an adjunct to weekly essential primary care services [8]. Despite these examples, there remains a tremendous unmet need. We sought to characterize the dermatologic needs in an uninsured population and present our expe-

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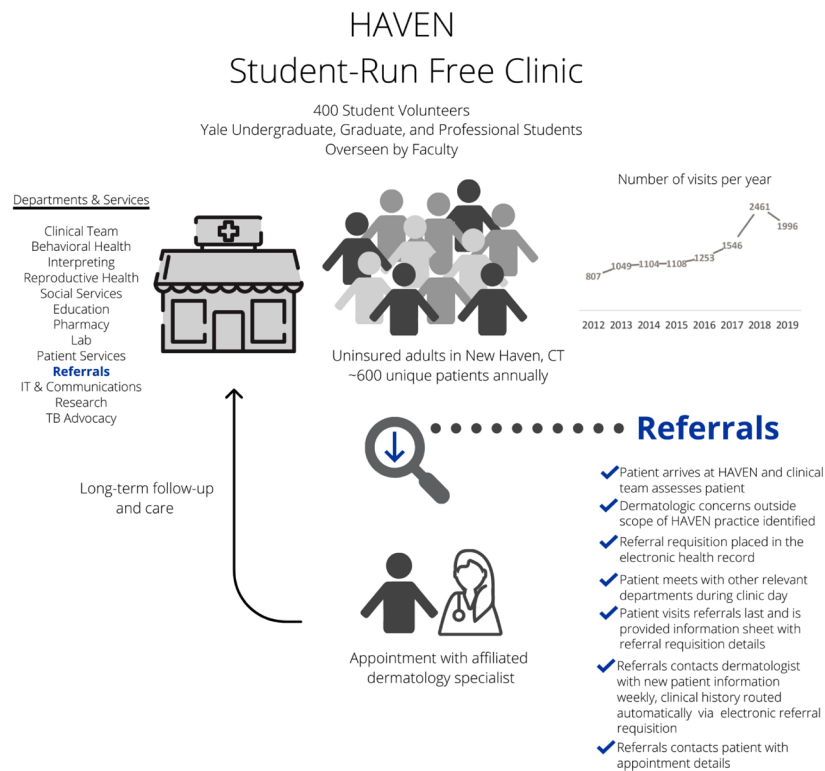


Figure 1. HAVEN structure and referrals framework for dermatologic concerns.

rience with a model employed to meet these needs for nearly the past decade.

MATERIALS AND METHODS

Established in 2005, HAVEN is a free, interdisciplinary student-run primary care clinic at the Yale School of Medicine with the mission of providing sustainable care for the uninsured in New Haven, Connecticut. HAVEN employs a unique, comprehensive referrals program [4], and in 2012, HAVEN became among the first student-run free clinics to provide dermatologic referrals within this context through a partnership with the Department of Dermatology at the Yale School of Medicine (Figure 1).

Such a collaboration was made as part of a larger referral department initiative created at HAVEN that today provides patients with access to 16 different specialties. Referrals specialists fall into three main categories: physicians who see patients outside of HAVEN, physicians who see patients at HAVEN, and physicians who are connected to patients for emergent specialty care through Project Access, a New Haven non-profit organization. Physicians are recruited on an as-needed basis by the referrals directors. In select cases for other specialty services provided by HAVEN, the need or volume can exceed the time and resources available from a specific

volunteer. In these instances, additional clinicians may be recruited. It is the responsibility of the referrals directors to anticipate such capacity concerns and proactively establish relationships with potential volunteer specialists; they are typically Yale School of Medicine faculty, members of the Yale Medical Group, or colleagues of current HAVEN attendings. Faculty at the Yale School of Medicine Department of Dermatology who volunteer their time and resources to care for referred HAVEN patients see them at their respective clinics.

Logistically, the patient referred out is seen by a specialist only for the specific presenting concerns that are not able to be managed at HAVEN, but then is ultimately managed long-term at the student-run free clinic. Due to the proximity of the free clinic in New Haven to Yale physicians, transportation barriers can often be addressed by the clinic's bus pass program. Patients are provided with detailed instructions in both English and their primary language that includes information about their specialty appointment and can be presented to the clinic upon check-in. If a case is deemed to be more serious and require additional resources, HAVEN works with the specialist to determine additional needs of the patient and recruit volunteer physicians who may be able to meet these needs as described above. Malpractice liability may be covered through the Free Clinic Federal Tort Claims

Act Program or the specialty practice's own liability insurance.

Following Institutional Review Board exemption by the Yale Human Investigation Committee (protocol #2000021926), we conducted a chart review of HAVEN patients referred to dermatology since inception of the referrals program.

RESULTS

Twenty-nine patients, predominantly male (72.4%), Hispanic (89.7%), and Spanish-speaking (79.3%) were referred, with an average age of 40. Latency between the patient initially experiencing a dermatologic concern and seeking care at HAVEN was 3.2 years. Time to first dermatology visit averaged 54.4 days, with 24.5 days for subsequent follow-up appointments. The majority attended their appointments (90.2%) and required one to two visits (87.4%), averaging 24.5 minutes. Most referrals were for a lesion of concern to rule out malignancy (65.5%). Among these, a diagnostic biopsy was required in 75% of cases, and pathology revealed that 93.8% were benign (37.5% melanocytic nevi, 62.5% other). There was a single instance of squamous cell carcinoma. Almost every patient in the cohort (95.6%) had resolution of their chief concern. Cost to the practice was \$276.75 per patient which totaled an average cost to the practice of \$795.65 per year.¹ These figures were determined by assigning CPT codes and selecting the highest Medicare reimbursement rate for the study end year. Pathology was sent to a collaborating dermatopathologist, similar to all other non-HAVEN patients in the practice. All charges were waived for patients (Table 1).

DISCUSSION

A student-run free clinic and dermatology practice partnership is feasible and effective. We found a high attendance rate and modest cost. Notably, as this manuscript utilizes CPT codes for financial assessment and not overhead, actual cost to the practice may indeed be less than the reflected reimbursement. Though there is limited data available regarding the financial demands of such an initiative, other figures available in the literature are comparable to those described in our study. The Free Clinic at Lubbock Impact, Lubbock, TX, reported a per patient cost of \$61.86 for dermatologic procedures exclusive of the cost of the office visit [8], and in analyzing published CPT coding data for the Hope Clinic-University of Michigan Health System, Ypsilanti, MI, partnership [6] utilizing the methods in this paper, a per patient cost of \$171.66 can be calculated.

As the majority of referrals were for cancer rule-outs and there was a skin cancer diagnosis in this cohort, there is a clear impact of this program. Furthermore, as most referrals were for benign lesions, our results highlight the importance of dermatologist expertise for triage. Ultimately, only 4.8% of HAVEN patients required referral to dermatology though the burden of skin disease is much higher; our framework models specialty care access in a resource-conscious manner. We observed excellent time to appointment intervals and resolution rates, suggesting that chronic dermatologic conditions are being adequately managed by the primary team at HAVEN. In addition, the same dermatologic practice has seen all referrals for the cohort of patients described in the study, and no patients have required re-consultation.

Prior data demonstrates that dermatologic care in student-run free clinics within specialized monthly sessions is well-reviewed by patients, with 82.2% of patients from one study considering treatment effective and 84.4% reporting that they were either likely or highly likely to visit a dermatologist again in the future. The majority (82.3%) of these patients had never visited a dermatologist prior to their experience at the student-run free clinic [7]. Similarly, dermatologists involved in this partnership found the experience satisfying and rewarding as it provides an opportunity to improve access to care for patients who otherwise may have never had the resources or opportunity to see a specialist.

Our results are derived from a single institution and trends may vary nationwide. However, New Haven's demographics are similar to the US population, lending a unique degree of external validity [9]. This study demonstrates the potential impact of dermatologists in improving accessibility to care and describes the associated costs with such a commitment. We highlight the unique aspects of our specific model, which ensures continuity of care due to referral to a single dermatology practice, optimizes resource utilization due to specific concern-based visits rather than general screening, and provides excellent time to appointment intervals due to flexible scheduling of consultations on an as-needed basis. Given the evolving COVID-19 pandemic with associated increases in the uninsured population and concerns of exacerbating existing disparities, such a model of specialty referral is especially relevant.

¹Per Medicare CPT codes.

Table 1. Characteristics of Patients Presenting to a Student-run Free Clinic Requiring Dermatology Referral and Associated Costs

Characteristic	Value ^a
Total	n = 29
Age, y	
Mean (standard deviation)	40 (10.8)
Median (range)	37 (24-63)
Sex, %	
Male	72.4
Female	27.6
Ethnicity, %	
Non-Hispanic White	10.3
Hispanic	89.7
Language, %	
English	20.7
Spanish	79.3
Occupation, %	
Craft and trade	31.0
Service and sales	17.2
Elementary	10.3
Plant and machine	13.8
Unemployed	13.8
Chief concern, %	
Lesion of concern	65.5
Pain/discomfort	34.5
Time from experiencing initial concern to presentation, %	
1 month	6.9
2-3 months	10.3
4-12 months	20.7
12+ months	31.0
Unknown	31.0
Time from presentation to dermatology visit, d	
Mean (standard deviation)	54.4 (26.3)
Median (range)	51 (16.0-104.0)
Time to second appointment and above, d	
Mean (standard deviation)	24.5 (17.1)
Median (range)	28.0 (2.0-49.0)
Attendance rate, %	
Completed	90.2
Cancellation	9.8
Visits, %	
One	45.8
Two	41.6
Three or more	12.5

Appointment time, m		
Mean (standard deviation)		24.5 (11.4)
Median (range)		20.0 (15.0-55.0)
Per year		116.4
Diagnosis, %		
Inflammatory conditions		21.7
	Acne-Rosacea	4.3
	Eczema	4.3
	Intertrigo	4.3
	Morphea	4.3
	Vitiligo	4.3
Benign lesions		73.9
	Acrochordon	8.7
	Keloid	8.7
	Lipoma	4.3
	Melanocytic nevus	26.1
	Sebaceous cyst	4.3
	Seborrheic keratosis	13.0
	Varicosities	4.3
	Verruca vulgaris	4.3
Malignant growth		4.3
	Squamous cell carcinoma	4.3
CPT codes, %		
	11100 – Skin biopsy	21.7
	11101 – Add-on skin biopsy	3.3
	11200 – Benign lesion removal	1.7
	11406 – Excision	5.0
	11900 – Intralesional injection	5.0
	12034 – Immediate repair wound	1.7
	88305 – Pathology	30.0
	99213 – Outpatient visit, established	20.0
	99242 – Outpatient consultation	11.7
Cost, \$		
	Per patient	276.75
	Per visit	151.55
	Per year	795.65
Outcome, %		
	Resolution	95.6
	Unsatisfactory clearance	4.3

cpt: current procedural terminology, d: day, m: minutes, y: years; ^aValues may not add up to 100% due to rounding or missing data.

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