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Descriptive Report

Establishing a Model for Free Dental Care for Uninsured Patients Served by a Student-Run Clinic

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Abstract

Background: This paper details the establishment of a free dental clinic within the Building Relationships and Initiatives Dedicated to Gaining Equality (BRIDGE) Healthcare Clinic, a student-run free clinic, in Hillsborough County, Florida through collaboration with Hope in Health Project (HHP), and local dental volunteers. The purpose of the clinic is to provide general dental service to BRIDGE patients. It notes the patient demographics, procedure types, and total cost of care provided at the first dental clinic.
Methods: Nine dentists, two dental hygienists, and one dental assistant were recruited through HHP as well as 29 local volunteers to participate in the clinic. BRIDGE Clinic patients were contacted via text message informing them of the opportunity to receive dental care. A triage event was held for initial evaluation and to determine services needed. The following week, triaged patients returned to receive dental services. Procedures offered included prophylaxis with fluoride varnish, extractions, and fillings.
Results: 71 patients were triaged and 62 received a procedure. The average age was 49±10 years. Of patients triaged, 87% (62) received at least one procedure, 72% (51) received prophylaxis with varnish, 18% (13) received extractions, and 39% (28) received fillings. Total number of procedures completed was 126, which included 51 prophylaxis, 28 extractions, and 47 fillings. The total cost for the services provided was 31,065 United States Dollar (USD) with an average cost per patient of 438 USD.
Conclusion: This project demonstrates the successful implementation of a pilot free dental clinic in the context of an established free, primary healthcare clinic. It provides information on the structure and cost of a free dental clinic and how it can be implemented to provide dental care to uninsured patients.

Introduction

Background

Oral health is essential to the general health and well-being of individuals, according to the Surgeon General's Report on Oral Health in America.[1] Poor oral health can negatively impact an individual's nutrition, sleep, psychological status, social interaction, and work.[1] It can also result in preventable ER visits and hospitalizations. According to data from Florida Health Charts, in 2018 Hillsborough County, Florida, saw preventable ER visits due to dental conditions at a rate of 693.4 per 100,000 people.[2] As with other medical conditions, the high rate of preventable ER visits is likely due in part to lack of insurance and/or the need for high-cost procedures.[3]

There are established safe and effective measures to prevent and treat common dental diseases, including fluoride mouth rinses, dental sealants, and prophylaxis or teeth cleanings.[1] Implementation of fluoridated water has been shown to help prevent tooth decay. In Hillsborough County, data from 2018 finds that as

much as 94% of its population receives fluoridated water.[2] Yet during 2011-2016 the prevalence of untreated tooth decay was 40-50% among adults who were non-Hispanic black, Mexican American or who had incomes <200% of the federal poverty level (FPL). This is twice the prevalence of adults who were non-Hispanic white or who had incomes >20% FPL.[4] There are federal and state assistance programs for select oral health services; however, the scope of these services is limited, and the reimbursement level is low in comparison to the usual fee for care.[1] There are many barriers to oral health, including limited income, lack of insurance, transportation, or time.[1] The importance of oral health is apparent, and effective care strategies are well established, yet there continue to be disparities among individuals. Currently, there are only a few opportunities available in Hillsborough County to get free or low-cost dental care, including Tampa Family Health Centers and Mobile Van Clinic.[5] In addition, only a few student-run dental clinics such as the University of California San Diego Student-Run Dental Clinic Project exist across the country.[6] Our model is the first we know of to provide primary dental care in the context of a primary healthcare clinic. Therefore, there is further need for dental care that can help to overcome these barriers and lessen the disparity.

BRIDGE Student-Run Clinic

The Building Relationships and Initiatives Dedicated to Gaining Equality Healthcare Clinic (BRIDGE) is a student-run free clinic that provides primary care to uninsured patients who are ≤200% of the federal poverty level in Hillsborough County, Tampa, Florida. The clinic is open once weekly at the Morsani Center for Advanced Healthcare, an outpatient center located on the University of South Florida (USF) health campus, and is led by physicians, faculty, and student volunteers from various medical disciplines, including medicine, physical therapy, pharmacy, public health, and social work. BRIDGE Healthcare Clinic is supported by the USF Morsani College of Medicine, generous community donors, and the multitudes of service hours provided on a weekly basis by the volunteer staff. BRIDGE and other student-run free clinics work to provide services to large numbers of patients needing care who are unable to afford it or access it elsewhere in the community.

Hope and Health Project

Hope and Health Project (HHP) is a nonprofit organization dedicated to collaborating with groups and organizations who work to providing care for the underserved and to those of great need in the United States and internationally.[7] HHP specifically works towards providing medical care, dental care, and access to education for individuals in need. Through the recruitment of dentists, oral surgeons, and dental assistant volunteers, HHP has been able to create a dental volunteer group. Though HHP has primarily provided support internationally with medical supplies, as well as dental teams, they have worked with organizations to assist in recovery from disasters, such as in Puerto Rico, Florida Panhandle, and in the Bahamas. More recently, HHP has begun working with clinics in need of dental care, utilizing the services they have provided internationally.

Study Purpose

The purpose of this project was to provide a model for establishing a dental clinic based on our pilot clinic within a student-run free clinic with the help of a local nonprofit organization. This study was preformed to describe the population served, services provided, and cost of a free dental clinic within BRIDGE Healthcare clinic, with the support of HHP, to better prepare for future clinics.

Methods

Participants

Dentists, oral surgeons, and dental assistants, as well as dental supplies, were provided through HHP, while volunteers were recruited from the USF Pre-Dental Society, an organization of undergraduate students interested in careers in dentistry. In total, eight dentists, one oral surgeon, two dental hygienists, one licensed dental assistant, and 29 assistant volunteers were recruited. All unlicensed volunteers completed the two-hour training necessary to become enrolled in the Volunteer Health Care Provider Program with the Department of Health, and licensed pro-

viders were contracted with the Volunteer Health Care Provider Program for sovereign immunity protection.

Procedures

Equipment and supplies necessary for dental procedures were provided by HHP, while the location for the clinic was provided by the Morsani Center for Advanced Healthcare, an outpatient center located on the USF campus where BRIDGE clinic is held on a weekly basis. The cost of dental equipment and supplies for the clinic was estimated to be 10,000 USD, which included cleaning equipment and supplies, fluoride varnish, and other supplies needed for the procedures. Some of the equipment may also be used in future clinics.

A BRIDGE Clinic staff member distributed a message in both Spanish and English via CareMessage (CareMessage, 2017), a text messaging platform used by the clinic to contact all active patients enrolled in the service, informing them of the opportunity to receive dental care. A triage event was hosted at the Morsani Center on a Saturday on a first-come first-serve basis for initial evaluation, followed a week later by dental procedures and services at the same clinic. All patients presenting for triage were evaluated. Triage criteria included comprehensive dental examination for pathology including gingivitis, periodontitis, dental carries, tooth decay, tooth fractures. Prior to the weekend during which services and procedures were performed, patients were divided into two groups designated to either arrive in the morning or the afternoon to allow for equal numbers of patients in the morning and afternoon sessions. Patients were seen on a first-come, first-served basis within their respective groups. Spanish language interpreters were available in-person for interpreting assistance when needed. Services provided consisted of cleanings, simple extractions, fillings, and fluoride treatments. Patients that attended the triage event but not the procedure event, as well as patients unable to attend either event but expressed interest, were placed on a waitlist for future dental clinics. Institutional Review Board approval was obtained prior to the beginning of data collection.

Table 1. Patient demographics and services provided

Parameter	All Patients, N=71 (%)
Age, years, mean±SD (range)	49±10 (24-66)
Male	26 (37)
Race	
Hispanic	37 (52)
White	11 (15)
Black or African American	5 (7)
Asian	1 (1)
Multiracial	3 (4)
Undocumented	14 (20)
Procedure	62 (87)
Prophylaxis	51 (72)
Extraction(s)	13 (18)
Filling(s)	28 (39)

Patient demographics and number of patients who received a procedure out of total patients triaged (N). Number of procedures can exceed N of total patients because patients can have multiple procedures.

Outcomes and Analysis

Primary outcomes included patient demographics (age, sex, race), procedure types, and total cost of dental care. The cost of service was estimated based on local prices from fairhealthconsumer.org (FAIR Health, 2020).

Results

A total of 605 patients received the outreach message. Of those, a total of 71 patients presented for triage on the first clinic day.

Of the original 71 patients, 62 presented for their procedure appointment on the second clinic day the following week. The average age was 49±10 years, and 63% were female. Roughly half of patients were Hispanic, Latino, or of Spanish origin. Of the total number of patients triaged, 87% (62) received at least one procedure, 72% (51) received prophylaxis, 18% (13) received extractions, and 39% (28) received fillings (Table 1).

The total number of procedures completed, not including the original triage encounter, was 126. This included 51 prophylaxis with fluoride varnish, 28 extractions, and 47 fillings (Table 2).

The estimated cost of each triage visit was 83 USD, each filling 162 USD, extractions 238 USD, and prophylaxis with varnish 162 USD. The total cost for the services provided was 31,065 USD with an average cost per patient of 438 USD (Table 3).

Table 2. Breakdown of number of procedures completed

Parameter	Number of Procedures
Procedure, total	126
Prophylaxis	51
Extraction(s)	28
Filling(s)	47

Total number of prophylaxis, fillings, and extractions provided.

Table 3. Estimated cost of dental service†

Parameter	Cost (United States dollar)
Cost of service per patient	
Triage*	83
Prophylaxis with varnish	162
Extraction(s)	238
Filling(s)	218
Average cost per patient	438
Total cost	31065

Breakdown of cost per procedure, total cost for both clinic days, and average cost per patient.
†Cost of service was estimated based on local prices from fairhealthconsumer.org
**Triage, initial dental evaluation.*

Discussion

The 2018 National Health Interview Survey reported that 27.9% of uninsured patients did not obtain needed dental care in the past year due to cost. In contrast, only 7.8% of patients with private insurance experienced similar inability to meet dental healthcare needs.[8] This data suggests that access to dental care is limited for uninsured patients, as costs are largely prohibitive. The pilot BRIDGE Dental Clinic, which operated over two days, was able to provide care to 71 out of the 390 active BRIDGE clinic patients (18%), who are all uninsured with annual incomes <200% of the FPL. Total value of services provided was estimated to be 31,065 USD, which included triage, extractions, fillings, and teeth cleaning and varnish.

Our experience implementing the pilot dental clinic suggests two important findings. The first is that there is a large unmet need for oral health care among our patient population. This gap in the healthcare system is consistent with national survey data and previously published literature as highlighted above. The second important finding is that dental services can be implemented effectively in the context of a student-run free healthcare clinic. Our successful implementation of the BRIDGE Dental Clinic relied on several factors. First, we were able to reach 532 patients using the text messaging platform, CareMessage, to provide information about the clinic. This enabled us to contact a large number of patients efficiently. Second, clinic was divided into two separate days one week apart. Patient triage was completed on the first day. The second day was reserved for procedures. This proved to be an effective model of care for this initial clinic, as it allowed us to assess our patients' needs and prepare appropriate materials for procedures. Finally, our care model utilized pre-dental students, dental assistants, dental hygienists, and dentists, which we were able to recruit through our collaboration with HHP, to deliver services as outlined above. This strategy enabled us to assign skill-specific roles to volunteer providers. It also established an educational component for pre-dental students who desired patient care experience.

Our ability to provide dental care in the context of a student-run free healthcare clinic has the potential to address health disparities in oral health. A 2010 survey of free clinics reported that these organizations conduct nearly 300,000 dental visits annually, supporting the need for free dental care.[9] The services provided were able to meet the immediate needs of many of our patients. The subset of our patients who required subsequent dental care were offered a list of local dental clinics that offered limited free services or reduced fees. Patients were instructed to call one of the centers listed for follow-up care.

Limitations of this study include its limited implementation period, as only one instance of this clinic has been completed to date. Future clinics will inform subsequent iterations. Implementing the dental clinic was also dependent on financial donations from community members, which allowed us to purchase supplies for procedures. Lack of access to financial resources may limit the ability of other clinics to reproduce our care model. Furthermore, BRIDGE Healthcare Clinic relies almost entirely on volunteer efforts to provide care and our volunteer network is extensive.

We had access to dental healthcare professionals and pre-dental students who were willing to volunteer their time to the clinic. Clinics which lack a robust volunteer workforce may be unable to implement a dental clinic effectively. BRIDGE Healthcare Clinic's unique clinic set-up and patient population, which is largely Hispanic, may limit application of our results to free clinics that are structured differently or that have a different patient population. Finally, our clinic only serves adult patients; however, our model may be applicable to clinics serving pediatric patients as well.

In the future, BRIDGE plans to continue offering more dental clinics scheduled at regular, annual or biannual intervals in accordance with American Dental Association guidelines.[10] Healthy People 2020 objectives for oral health of adults include reducing the proportion of adults with untreated dental decay to 25%.[11] We aim to achieve this goal among our patient population. We have been unable to have dental clinics due to the SARS-CoV-2 pandemic; however, we plan on resuming clinic at regular intervals once we deem it safe for our patients and volunteers. This model of care will facilitate access to needed dental care among our patient population, thereby promoting oral healthcare for individuals who need it most.

Conclusion

Dental care is often an unmet medical need for uninsured individuals. Our project shows that a free dental clinic can successfully be implemented within the context of an established free healthcare clinic. This has the potential to address health disparities by promoting oral health care among indigent populations. Given its success, our model may be applicable to other student-run free clinics seeking to expand healthcare services.

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Disclosures

The authors have no conflicts of interest to disclose.

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