

# An Urban Telemedicine Program for HIV Services for Vulnerable Populations

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## ABSTRACT

Telehealth has long been associated with connecting rural providers with specialty services that are located in urban and University settings. This project attempts a new approach of connecting HIV specialty services at 360: The Positive Care Center at UCSF Medical Center (360-UCSF) to San Francisco community-based clinics and service organizations that provide care to underserved individuals living with HIV with an emphasis on HIV+ people of color. The goal of the Urban HIV Telemedicine Program is to provide resource allocation in a time of decreasing funds for HIV care and improve access to subspecialty HIV services needed for optimal management of today's HIV patient (e.g. pharmacist, dietitian and expert HIV resistance assessments and consultations). Three community clinics and one community-based organization are participating in this project where their patients' receive medical, pharmacy and nutritional consultations around their HIV disease. Post-telemedicine evaluations were collected from patients to measure their knowledge, attitudes, and opinions about their participation in the telehealth program.

## INTRODUCTION

The City and County of San Francisco has an estimated 2007 population of 764,976[1]. Of that number, an estimated 18,700 people, or 2.5%, are living with HIV/AIDS, according to SFDPH[2]. San Francisco has disproportionate rates of substance abuse, mental illness, and homelessness, and the population of people living with HIV/AIDS (PLWH) are generally impoverished, homeless, and struggling with co-morbidities such as addiction and mental illness.

Community clinics are a vital part of California's healthcare system especially for uninsured or low-income patients. Due to the downturn in the economy, community clinics are facing less funding but the number of patients they serve continues to increase. In San Francisco, these community clinics are serving a larger number of HIV+ patients who have no insurance or are marginally insured. Most of these clinics have very minimal access to other HIV specialty services such as pharmacy and nutrition services.

### Why Urban Telemedicine?

**Public Transportation:** Although San Francisco has a fairly comprehensive public transportation system, it is limited and at times unreliable especially in the lower income areas of the city.

**Resource Allocation:** Many community clinics have limited resources and are unable to offer specialty services consistent with best practices. The Urban HIV Telemedicine Program helps provide these services to clinics in an efficient manner by allowing the specialist to remain in one place (UCSF) while patients receive specialty care at a setting where they feel comfortable.

**Patient Challenges:** Many disenfranchised patients have trouble making appointments due to multiple social challenges including transportation, substance use, mental health issues, and fear of going to new places and new providers.

Because of these multiple issues we started a pilot project to provide HIV specialty services via a secure telemedicine network in September 2008.

## STUDY AIMS

1. To characterize the patients who access urban HIV Telemedicine services.
2. To evaluate the distribution of HIV Telemedicine specialty services accessed.
3. To describe patients' experiences with urban HIV Telemedicine services.

## METHOD

Subjects are recruited at 3 community based clinics via referral by primary care provider for desired services. Subjects are also enrolled from a community based organization from referrals by case managers or self-referral during drop-in sessions.

### AGENCY DESCRIPTIONS

**Agency Descriptions:** This telehealth program uses a traditional "Hub and Spoke" model with 360-UCSF being the hub and four community agencies being the spoke.

#### Hub & Spoke Model for Urban HIV Telemedicine Program

Location of UCSF (Blue) and Partnering Clinics (Green)



❖ **South of Market Health Center:** is a non-profit health center that provides comprehensive medical, dental and podiatry services to individuals and families who have little or no health insurance. They offer specialty care for HIV/AIDS, gastrointestinal disorders and diabetes. The Center serves over 5,000 patients a year. SMHC has been providing Telemedicine services since September 2008 and has referred 14 patients for consultations.

❖ **Maxine Hall Health Center:** is a primary care medical clinic that is part of the San Francisco Dept. of Public Health Clinics. They offer HIV specialty services to people with HIV/AIDS. Most patients have MediCal, Medicare or a San Francisco City insurance. They are also one of the first clinics in SF to offer medical interpretation through video conferencing technology. MH has been providing Telemedicine services since January 2009 and has referred 9 patients for consultations.

❖ **Haight Ashbury Free Clinic:** was founded during the social revolution of the 1960s to help thousands of homeless people whose lives were affected by drug and alcohol abuse, mental and psychiatric issues. The clinic offers a variety of services including HIV/AIDS treatment, substance abuse/mental health treatment and medical services at area rock concerts.

❖ **Black Coalition on AIDS:** is a community based agency that offers case management, support groups, social support, and medical referrals to HIV + African-Americans men and women in San Francisco. BCA has recently starting conducted a telehealth Introduction session with 4 clients referred for consultations to date. BCA is located 6.8 miles away and takes about 90 minutes to travel on public transportation.

## DATA ANALYSIS

**Data/Statistical Considerations:** Demographic information was collected on patients that agreed to participate in Telemedicine consultations and demonstrations. Demographics collected include age, gender, ethnicity, living situation, health risk factors, and comorbidities.

At the end of each Telemedicine session, patients complete an 8-question patient satisfaction survey to capture their perceptions of the telemedicine consultation.

This study uses descriptive statistics to examine the preliminary utilization and effects of the Urban HIV Telemedicine program.

## RESULTS

**Patient Demographics:** 23 patients participated in the Urban HIV Telemedicine Program to date. No transgendered patients have participated to date. All patients lived in apartments or transitional housing except for 2 patients who were living in shelters. Other patient demographics are listed in Table 1 and Chart 1 below.

Table 1: Patient Characteristics	N	%
HIV	23	100%
Age	Average 47	(Range 24-59 years)
Male	20	87%
Female	3	13%
AIDS	8	34%
Hepatitis B/C	6	26%
Substance Abuse History	10	43%
MediCal/Medicare Insurance	12	43%
Healthy SF (Low Income Insurance)	8	35%
No Health Insurance	3	13%
<b>Baseline Labs</b>		
CD4+ Count <200	2	9%
CD4+ Count >200	21	91%
HIV RNA >75 copies/mL	8	35%
HIV 1 RNA >75 copies/mL	15	65%
<b>Median (Range)</b>		
HIV 1 log (N=15)	4.40 (1.63-5.70)	
CD4+ Count (N=23)	338.5 (69-632)	

Chart 1 shows ethnicity of the telemedicine participants and Chart 2 shows the type of telemedicine services accessed.

Chart 1: Ethnicity of Telemed Patients

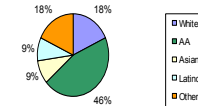
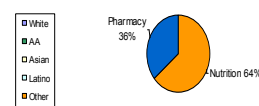


Chart 2: Type of Telemed Services Accessed



**Patient Experiences:** From September 2008 to April 2009, 16 of the 23 patients (70%) have completed a post consultation questionnaire about their satisfaction with the Telemedicine process. All of these patients had never experienced a telemedicine consultation. Of the Telemedicine consultations completed, 64% were for nutrition and 36% were for pharmacy consultations; Chart 2 shows these results.

Chart 3 demonstrates that 74% of patients agreed or strongly agreed that telemedicine answered their health questions adequately while 27% were not sure.

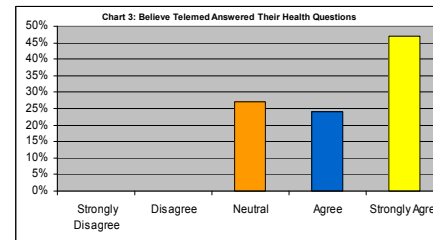
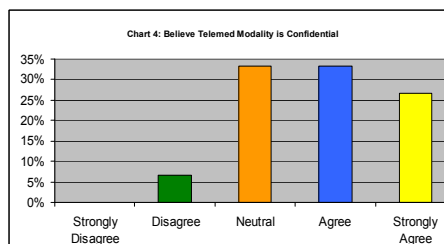


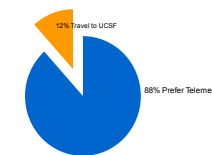
Chart 4 shows that 60% of patients believed that the Telemedicine technology is confidential, however, 33% were not sure of the confidentiality and 7% disagreed that Telemedicine is confidential.



## RESULTS, Cont.

**Telehealth Technology:** 87% of patients reported the quality of the visual image as satisfactory to very satisfactory and 100% reported the audio quality as satisfactory to very satisfactory. Overall, 88% of patients (14 of 16) reported they would participate in telemedicine consultation again.

Chart 5: Which Modality You Prefer for Next Visit



## DISCUSSION

**Patient Characteristics:** This preliminary data indicates that uninsured and underinsured HIV+ individuals did utilize an urban-based HIV Telemedicine service. These patients also have significant comorbidities, and often carry an AIDS diagnosis.

**Services Utilized:** While the majority of patients already had an HIV provider, most felt that telemedicine consultations with a pharmacist and nutritionist were helpful (see below). It is clear that currently patients and providers are preferentially utilizing these services rather than expert HIV provider consultations. Whether this reflects provider bias or not remains to be assessed.

**Patient Satisfaction:** Overall patients were very satisfied with their telemedicine experience, believing that their consultation(s) adequately addressed their health questions, and preferred this modality of service rather than commuting for needed HIV subspecialty services. However patients did express concerns about the confidentiality of the consultation as well as if the session is being videotaped. Patients repeatedly ask if it is being video taped and if the T-1 line can be "tapped into" (data not collected).

**Challenges to Consider:** Working with community clinics presents their own challenges given the current economic climate. This project has faced multiple delays due to staff turnover and layoffs, staff fear of using technology, limited time to train staff and lack of a Telemedicine coordinator or champion. At one clinic, the telehealth coordinator position has turnover 3 times in 6 months. Another clinic has had turnover of the Medical Director which has delayed the project as well.

The purpose of this Urban HIV+ Telemedicine Program is to increase patient's access to multidisciplinary HIV specialty care to those that may not have access to these specialty services. Such care is essential for the optimal management of today's increasingly complicated and aging HIV population. Preliminary data shows that patients are overall satisfied with the modality and would use Telemedicine again leading to the optimal treatment of HIV patients. The early results of this pilot study suggest that low income patients are willing to use telehealth for access to needed services despite reservations over confidentiality. Thus, an urban-based telehealth program targeted to HIV+ patients can increase the access of underserved populations even in this time of decrease funding.

## LIMITATIONS

**Sample Size:** The number of patients in this sample is very small and limited. Descriptive data is all that can be used at this point.

**Sample Bias:** This study only captures patients that agree to participate in a telemedicine consultation and nothing is known about those patients that decline the consultation and reasons why they decline. Furthermore, patient satisfaction surveys were only gathered for 70% of participants. These issues are currently being addressed.

## ACKNOWLEDGEMENTS

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## REFERENCES

Please contact authors for complete reference list.

