Demonstration Site Summary

E-VOLUTION

Washington University School of Medicine, Project ARK

St. Louis, Missouri

In the Ryan White HIV/AIDS Program (RWHAP), Part F: Special Projects of National Significance (SPNS) Initiative

Use of Social Media to Improve Engagement, Retention, and Health Outcomes along the HIV Care Continuum

Principal Investigator: Katie Plax MD, plax_k@wustl.edu

Project Coordinator: Jeffrey Glotfelty MPH, jeffglotfelty@wustl.edu

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E-VOLUTION:

A two-way text messaging intervention to connect with, support, and improve health outcomes for youth living with HIV.

Washington University in St. Louis School of Medicine

E-VOLUTION
Connect. Engage. Thrive.

Intervention Summary

E-VOLUTION utilized automated two-way text messaging coupled with live text messaging between medical case managers and their HIV-infected youth/young adult clients within a Ryan White HIV/AIDS Program in St. Louis Missouri, Project ARK AIDS/HIV Resources and Knowledge.

The E-VOLUTION program focused on and succeeded in improving HIV health outcomes for youth, especially young African American men who had sex with men (MSM). Specifically, the initiative improved—viral load suppression rates, HIV medical visit show rates, and communication with medical case managers, all the while removing barriers and responding to needs through the use of mobile health (mHealth) programming.

Increased viologic suppression

More HIV medical visits kept

Improved CM communication

Rationale and Need

While national HIV infection rates have begun to decline, certain populations, including people of color, young adults, and men who have sex with men, still experience disproportionate rates of infection.[i] In addition, youth have the poorest HIV care continuum outcomes including lower rates of linkage to care, retention and viral load suppression (VLS).[ii] These disparities highlight a need to implement a novel approach, specific to the young adult population that supplements existing services available to those living with HIV/AIDS.

In an alarming trend, during the period of 2010-2013, youth represented both a growing number and proportion of new HIV/AIDS cases within the St. Louis region. In 2013, there were 332 new diagnosed HIV/AIDS cases in the St. Louis MSA. In 2013, youth ages 13-24 represented 33.7% (n=112) of the total 332 new HIV/AIDS cases in the region. In addition, this population was found to have the poorest HIV care continuum outcomes.

Studies have found that, of HIV-infected individuals, patients who received text-messaging support had significantly improved antiretroviral adherence and rates of VLS.[iii] Text messages communicate appointment reminders to decrease non-attendance rates at HIV clinics[iv] and personalized affirming or intervention messages for HIV medical care.[v] Studies have also shown that automated systems that go beyond the single message or "push" message and utilize a two-way communication have improved results in affecting the desired behavior.[vi,vii] Mobile technology and text messaging are particularly appropriate for use in a study with adolescents since texting has become their preferred method of communication.[viii] Cell phones have become indispensable tools in teen communication, with 1 in 3 adolescents sending more than 100 text messages a day.[ix] Moreover, text messaging holds unique promise for future interventions with underserved and at-risk adolescents who may be more willing to use text messaging.[viii]

Intervention Description

The E-VOLUTION texting intervention included two components: an automated two-way text messaging system coupled with live text messaging between medical case managers (MCMs) and their clients, youth/young adults living with HIV. Utilization of the automated two-way text messaging system offered the ability to alert members of the care team, in real-time, allowing for expedited intervention. Then, person to person text messaging between the participant and their MCM provided follow-up of participant needs identified by the automated system.

Key Components of E-VOLUTION included:

E-VOLUTION Digital Communication Strategies		HHS Common HIV Indicator		
		Linkage to Care	Retention in Care	Viral Load Suppression
Automated Text Messaging	Daily Medication Reminders		✓	✓
	Bi-Weekly Mood Check-Ins		✓	
	Appointment Reminders	✓	✓	✓
	Housing/Social Services Check-In		✓	
Person-to-Person Text Messaging Youth/Case Manager		✓	✓	✓

Intervention Summary

For successful start-up of a mHealth program like E-VOLUTION, The Washington University team identified the following activities as crucial during pre-implementation:

- Assess Organizational Commitment and Capacity
- Develop Organizational Policies, especially around privacy and text messaging standard practices
- Assess openness and skill level of staff in regards to using mHealth technology
- Collect youth feedback
- Thoroughly train staff
- Develop a plan for client recruitment and engagement

Elements essential to the replication of E-VOLUTION includes:

- A text messaging delivery system that is mobile-based and agnostic of mobile provider.
- An automated texting service that pushes out messages AND collects responses to questions.
- A system that immediately provides real-time alerts to the care team allows a prompt response to client reported issues.
- A two-way system fortifies a feeling of human connection between care provider and client.

Once enrolled in the automated system, participants began receiving the automated text messages, which asked medically-relevant questions and prompted recipients for a response. EVOLUTION worked with the system vendor to build an HIV-specific suite to prompt participants with texts about medication adherence, upcoming appointments, general mood, and social service needs.

To supplement the automated two-way text message system, case managers communicated with clients on their work cell phones via text message. Medical case managers were tasked to text, at minimum, monthly with enrollees and to follow-up on any alerts that we triggered by the system.

Key staff needed for delivery of E-VOLUTION include:

- Project Manager/Financial Administrator,
- Project Coordinator/Champion, and
- Field Staff/Manager of client responses to automated system

Evaluation of the E-VOLUTION project reveled the following outcomes:

- Participation in E-VOLUTION was associated with improved viral load suppression rates
- Texting with medical case managers improved attendance at medical visits
- Text messaging improved case managers and clients communication

More in-depth discussion of the findings and considerations for replication are included in the full replication manual.

[i] Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention. (2019). https://www.cdc.gov/hiv/statistics/overview/ataglance.html [ii] Griffith DC & Agwu AL. Caring for Youth Living with HIV across the Continuum: turning gaps into opportunities, AIDS Care. 2017 Feb. 29:10, 1205-1211. [iii] Lester RT, Ritvo P, Mills EJ, Kariri A, Karanja S, Chung MH, Jack W, Habyarimana J, Sadatsafavi M, Najafzadeh M, Marra CA, Estambale B, Ngugi E, Ball TB, Thabane L, Gelmon LJ, Kimani J, Ackers M, Plummer FA. Effects of a mobile phone short message service on antiretroviral treatment adherence in Kenya (WelTel Kenya1): a randomized trial. Lancet 2010 Nov; 376 (9755):1838–45. [iv] Da Costa TM, Salomão PL, Martha AS, Pisa IT, Sigulem D. The impact of short message service text messages sent as appointment reminders to patients' cell phones at outpatient clinics in Sao Paulo, Brazil. Intl Med Informatics 2009 Sept; 79 (2010):65-70. [v] Ingersoll K, Dillingham R, Reynolds G, Hettema J, Freeman J, Hosseinbor S, Winstead-Derlega C. Development of a personalized bidirectional text messaging tool for HIV adherence assessment and intervention among substance abusers. J Subst Abuse Treat. 2014 Jan; 46(1):66-73. [vi] Murray MC, O'Shaughnessy S, Smillie K, Van Borek N, Graham R, Maan EJ, WelTel BC1 Study Team. Health care providers' perspectives on a weekly text-messaging intervention to engage HIV-positive persons in care (WelTel BC1). AIDS Behav 2015 Oct; 19(10):1875-1887. [vii] Saberi P, Johnson MO. Technology-based self-care methods of improving antiretroviral adherence: a systematic review. PLoS One 2011; 6(11):e27533. [viii] Lenhart, A, Smith, A, Anderson, M., Duggan, M, Perrin, A. Teens, Technology and Friendships. Pew Research Center, 2015 August. http://www.pewinternet.org/2015/08/06/teens-technology-and-friendships/ [ix] Schnall R, Okoniewski A, Tiase V, Low A, Rodriguez M, Kaplan S. Using Text Messaging to Assess Adolescents' Health Information Needs: An Ecological Momentary Assessment. J Med Internet Res. 2013 Mar; 15(3): e54.