



How Advances in Technology Improve HIV/AIDS Care

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Abstract

In the U.S., the number of individuals aged 50 and older who are living with HIV has increased, leading to a phenomenon called the graying of the HIV/AIDS epidemic. Advances in treating HIV have brought about a large growing population of seniors with HIV who are simultaneously facing social, psychological, and physical challenges correlated with the aging process. The stigma against HIV/AIDS has been linked to poor health, depression, and loneliness. In a recent study, about 39.1% of HIV/AIDS patients showed symptoms of major depression (C. Grov et al, 2010). Consequently, to reduce lasting effects of major depressive symptoms, there is a vital need for service providers to employ innovative efforts to confront the stigma and psychosocial and physical health problems that are characteristic of an older HIV/AIDS population. The new technological approaches to healthcare delivery have resulted in faster, more accurate diagnosis and monitoring, in more sophisticated coordination across regions and agencies, and in sophisticated risk-checking procedures. New healthcare technology that can help the AIDS/HIV patient is called Health Information Technology, a basic element of Health Relationship Management Services (HRMS), which is a new approach to healthcare. HRMS can assist individuals with HIV/AIDS in managing not only their physical, but also their mental health. (**Int J Biomed.** 2016; 6(4):303-304.)

Key Words: HIV/AIDS • IoT • Health Relationship Management Services • Remote Health Monitoring

Introduction

With all of the advances in medical technology, is there anything that can help the AIDS/HIV patient? AIDS is a chronic disease that is typified by suppression of an individual's immune system. The clinical materialization of AIDS is characterized by the presence of opportunistic infections, dementia, wasting, and AIDS-related cancers. The number of U.S. individuals aged 50 and older who are living with HIV has increased, leading to a phenomenon that has been described as the *graying* of the HIV/AIDS epidemic (Gorman, 2006; Shah & Mildvan, 2006). Advances in treating HIV have brought about a large growing population of seniors with HIV who are simultaneously facing social, psychological, and physical challenges correlated with the aging process. In addition, the HIV/AIDS-related stigma has been linked to health, depression and loneliness. A recent study found that 39.1% of HIV/AIDS patients showed symptoms of major depression.^[1] Consequently, to reduce lasting effects of

major depressive symptoms, there is a vital need for service providers to employ innovative efforts to confront the stigma and psychosocial and physical health problems that are characteristic of an older AIDS/HIV population.^[1]

However, the question remains, "Is there any healthcare technology that can help the AIDS/HIV patient?" The answer is, yes, and it is called Health Information Technology, a basic element of HRMS,^[2] which is a new approach to health care. Information is essential to high quality health care; therefore, it is important to have nationwide, reciprocal, interchangeable health information available wherever and whenever it is needed, in private, secure electronic form.^[3] The largest population of beneficiaries of this innovative system is chronically ill individuals, especially HIV/AIDS patients.

Individuals who are living with AIDS or HIV have health problems in addition to adhering to a complicated medication regime. To ensure that all caregivers and nurses are getting the complete picture for these chronically ill patients, it is important to be able to collect AIDS/HIV patient information. Information Technology (IT) and eHealth technologies and resources for HIV/AIDS patients are rapidly changing due to the influx of new media, such as interactive internet communication that allows them to create, alter, and share

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content using simple, inexpensive, or free tools. All that is needed is a computer or mobile device with Internet access.^[4] HRMS is an innovative technical approach to delivering health care. By using a remote health monitoring system as part of HRMS, an individual's personal health data are collected and sent immediately to the cloud for restructuring into actionable information that can be acted on when needed.

HRMS can assist individuals with HIV/AIDS in managing not only their physical, but also their mental health. Patients can join online networks, comment on blogs, and receive medication reminders on their mobile phones. Such health IT tools can connect HIV/AIDS with other HIV/AIDS patients and experts, friends, family, and caregivers to share their medical information and experiences and connect with others who are in similar positions to share their health stories and obtain emotional and social support.

The most ideal method of making information available at the right time at the right place is through electronic systems, which HRMS can provide,^[2] to convert traditional paper records into electronic form. This Electronic Health Record (EHR) information can be easily transmitted, displayed in a variety of ways, and be combined with information from many sources, which is sent to caregivers and care-friends. A patient can keep his/her own personal health records, either on a personal computer, on Google or Microsoft, or even on a hospital computer. The main idea is that the patient maintains and controls personal health data, and the more health issues a chronically ill individual has, the more crucial it is that this information be made available.^[3]

Advances in technology, such as remote health monitoring systems and HRMS, are being used to improve healthcare service delivery and make it possible to help providers and patients conduct 24/7 health monitoring. An estimated 70% of U.S. doctors already utilize some aspect of new medical (or health) technology; however, only about one quarter subscribe to a sophisticated, multifunctional system. Ideally, a comprehensive IT system should empower patients, advance healthcare delivery, and transform patient data into life-saving research.^[4]

Healthcare technology has come a long way, and many innovations can now benefit AIDS and HIV patients. The new technological approaches to healthcare delivery have resulted in faster, more accurate diagnosis and monitoring, in more sophisticated coordination across regions and agencies, and in sophisticated risk-checking procedures. Over 70 million people worldwide have been diagnosed with HIV. To lower healthcare costs, it is necessary to improve the care of patients who suffer from HIV/AIDS disease and help them remain in good health and out of emergency rooms and hospitals, where patients often contract infections, resulting in millions of dollars in healthcare costs. Remote monitoring of health can improve healthcare delivery and improve patient involvement and adherence. Many HIV/AIDS patients find themselves isolated

and lonely, which can lead to dementia.^[1] To avoid this, HRMS provides a patient platform wherein HIV/AIDS patients can join online networks to interact with others on social network sites, share personal health stories, offer commentaries, watch videos or news, and discuss issues of relevance to people with similar experiences. Health-related online communities, such as HRMS, offer social and emotional support by connecting with others who are experiencing similar challenges to exchange information, while at the same time keeping their privacy. Facebook and MySpace allow people to connect by creating a personal page or group. Blogs, which are frequently updated websites that combine images and text with links to other websites, allow HIV/AIDS patients to participate in discussions on HIV/AIDS issues, share personal health stories and experiences, ask questions, and share opinions and other information. HRMS and certain blogs encourage dialogue by allowing people to leave comments and receive HIV policy information, news media, health news, and HIV/AIDS research updates.^[4]

Cellular phones and other wireless devices make viewing, sending, messaging, and receiving information easy. The benefits of HRMS, coupled with mobile health assistance, enable AIDS/HIV patients to set up medical and medication reminders, and receive alerts for these reminders via email or text messages (Short Message Service, SMS) (HRSA, 2016). Mobile health applications (apps) on iPhones or other smartphones support healthcare management, and through a weight tracker, HIV/AIDS patients can set weight gain or loss goals, which are especially important for individuals dealing with this illness.

Remote health monitoring devices, such as the one used in HRMS, are used to track and store health metrics, which can be used to manage and monitor a wide range of health conditions. Some devices can collect an individual's blood pressure, glucose, and oxygen and send the data by phone or internet to a provider or to the cloud for analysis to support patient engagement and physician-patient communication.

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