CAN CELL PHONES MESSAGE SERVICE INCREASE ADHERENCE IN HIV/AIDS PATIENTS ON THERAPY?

Alvaro Villanueva M.D.
Takemi fellow International Health
Harvard School of public Health

GOAL

A randomized comparative pilot project in the city of Barranquilla, at the Northern region of Colombia, will be implemented to use text message service (TMS) on cell phones to remind patients to take their medication, saving the over-stretched public health services time and money. An evaluation of this intervention will be made based on improvement in adherence in the conventional standard system. If more people improve adherence with TMS technology, it will save a lot of money and it will relieve the burden on our Health system. This could be a good example of innovative schemes for community initiatives that will help improve efficiency of HIV/AIDS therapy. It will justify this project

PROBLEM

Innovative approaches are needed to increase education, access and adherence to HAART among HIV/AIDS population who undergo antiretroviral therapy. Interventions to improve retention among those who initiate therapy are urgently required, and efforts are needed to ameliorate barriers to treatment retention and adherence.

RESEARCH / APPROACH

We will consider a sample of 50 HIV adults' seropositive patients, under standard/conventional ARV treatment for HIV/AIDS in PREVENTIO Medical Center. These patients are under treatment duration ranging between 2-72 months. A benchmark analysis of their demographics, adherence, cost-effectiveness of treatment and quality of life will be undertaken towards gauging the situation under conventional therapy. Following this, we equally divide this sample of patients into two randomized groups, one group will be provided with Cell phones and a medication adherence support program, and the other without cell phones. This exercise is primarily intended towards examining consequential impact on the better adherence as a result of reminders through cell phone.

BACKGROUND

Medication adherence support refers to an array of strategies and services to assist people in taking medications as prescribed.
Adherence is frequently addressed as a behavior that can be improved

by making better individual habits or motivation (). However, the urban poor contend with barriers to adherence, which are beyond their individual control. Adherence occurs in a social and environmental context. It is difficult to take medication regularly when one is homeless, or hungry, or unable to access regular medical care. The success of highly active antiretroviral therapy (HAART) is entirely dependent on the ability and willingness of the individual to adhere to complex antiretroviral regimen (). In poor countries ART adherence rates are comparable with those seen in developed countries (). Durable suppression of viral replication is directly correlated with degree of adherence (). While uncontrolled viral replication due to non-adherence is clearly detrimental to the individual along with its broader public health implications. The risk of transmission of HIV is directly correlated with the amount of virus present in blood (26). Furthermore in the setting of ongoing viral replication, drug resistance viral strains predictably emerge ().

Dr. David Green, in South Africa where they are facing one of the worst TB epidemics in the world is using a text message service on cell phones to remind patients to take their medication. He enrolled. 300 patients in a local clinic in Cape Town and they have been receiving a text message on their cell phones reminding them to take their pills. Of the patients involved in the project, there has been only one treatment interruption (). Even the very poor can have cell phones these days, which is no longer a limitation.

APPROACH

To evaluate and compare HIV/AIDS patients under a group in a conventional/standard antiretroviral therapy, their population patterns of adherence using a text message service (TMS) on cell phones to remind patients to take their medication, with the conventional standard treatment. Both populations will be evaluated during 12 months of follow up.

MONITORING/BENCHMARKS

Between July 2004 and July 2005 fifty HIV/AIDS patients enrolled in PREVENTIO will be examined by the medical care group of this center. Besides clinical evaluation an enquiry into their demographics, adherence, and quality of life will also be carried out.

After they had been on these evaluations procedures, they will be randomized into two groups:

First group. Text message cell phones reminding*:* Twenty-five HIV/AIDS patients on antiretroviral therapy will receive a text message on their cell phones reminding them to take their pills. They will receive cell phone use training.

Second group. Controls: Twenty-five HIV/AIDS patients on antiretroviral therapy will be the control group. They will not have any kind of cell phones reminding system.
Of the patients involved in this project, we are going to measure adherence and compliance with interviewer administered questionnaires (IQA). During this study and after 12 months using cell phones we are going to learn how many of these and how frequently these patients have treatment interruption.
Randomization:
Given the list of 50 patients, we will draw random numbers between 1 and 50 without replacement till we get the first 25 numbers and they will form one group against the other.

Interviewer administered questionnaires (IAQ). We will measure adherence by the ACTG Adherence Follow Up Questionnaire, Spanish version (). This self-report is the most common method of estimating adherence. It will be applied during therapy every month and at the end of the protocol.

Software design. We will use a designed special computer software program that automatically sends special message service (SMS). The initiative uses technology in a simple, cheap and flexible way: a software application captures the patient's details into a database, a computer server reads the database, and then sends personalized messages to each patient. Each patient receives a personalized message with different text each day. Because patients can complain that the initial message "take your medicine now" is too "boring" We will add disease information and tips about lifestyle management. Each patient's name also appears at the top of the message. This keeps them very interested. An exciting area to implement the use of designed special computer software program that automatically sends special message service (SMS) would be in gathering data regarding adherence to HIV medications
After a month of being on treatment, the service would send a message warning the patient that even though they were feeling better, they will have to continue with the treatment, and remembering medical appointments.

PATIENTS RECRUITMENT AND FOLLOW UP.
We plan to follow up a total of 50 HIV/AIDS patients over the age of 18, who receive care at the PREVENTIO Medical Center in Barranquilla, Colombia during 12 months period. They will receive complete information about this protocol. After they review an informed consent, they will go first for the initial evaluation and will be canvassed with

questionnaires collecting information about adherence, demographic, and quality of life. These HIV/AIDS patients will be randomized in two groups; one group of these patients will receive instruction and education about the cell phones SMS program use. Both groups will be continuously evaluated through the interview-administered questionnaires every week. A special questionnaire will be assigned to the patients on SMS program, measuring the acceptability of this system

BUDGET

Designed special computer software program that automatically sends special message service (SMS). _____
Cell phones_____
Software_____
IQA questionnaires_____
Data management system, including
Computers _____
Statistical Analysis_____
Secretarial assistance_____
Travels_____
Principal Investigator_____
Co investigator_____