

**NEW INFORMATION AND COMMUNICATION  
TECHNOLOGIES TO COMMUNICATE WITH PATIENTS:  
TEXT MESSAGING**

by

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## **ABSTRACT**

New information and communication technologies such as cell phone communication hold great potential for improvements in health care access and delivery. This paper addresses the use of text messaging for patient communication. It includes a case study that is one of the first globally, to examine the use of text messaging to notify patients of STD results. Findings from two focus groups with 15 participants from an urban Denver STD clinic show patients reacted positively regarding the use of text messages for notification. Reasons for positive reactions include ease of use, privacy, convenience, control over the process, and the speed of receiving and responding to a text message. Participants' concerns about sending health information over text message include lack of privacy; and access to cell phone and cost. The new information age and the availability of internet and computers have created opportunities for the advancement of communication in health.

**Keywords:** Cell phone; Text messaging; Health communication; STD; test results

**Subject Terms:** Information and Communication Technologies-Communication in Medicine; Delivery of Health care; Health Promotion; Communication

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## **LIST OF ABBREVIATIONS**

DH	Denver Health
SMS	Short Message Service
DMHC	Denver Metro Health Clinic
GOe	Global Observatory for eHealth
ICT(s)	Information and Communication Technologies
STD	Sexually Transmitted Diseases
WHO	World Health Organization

## **INTRODUCTION AND BACKGROUND**

The information age, a time when it is easy to access, send and receive information, has resulted in the emergence of new Information and Communication Technologies (ICTs) in health. These include computer assisted health programs, electronic health systems, and clinical databases (Sugg, 2006). The information age provides an avenue for the development of new communication approaches while allowing for older approaches of communication to continue to exist. New fields such as eHealth, Telemedicine, and other related communication technologies are rapidly growing and hold substantial potential for health communication efforts. The goals of new ICTs are to support clinical care, provide health information, and to provide a platform for publishing, disseminating health alerts and supporting administrative functions (WHO, 2006).

### **Information and Communication Technology (ICT) in disease prevention and health promotion**

The development of new technologies provides opportunities to obtain health information, education and health interventions tailored to individual preferences (Fotheringham & Owen, 2000). Some communication approaches are computer or internet mediated. The development of computer-mediated communication can extend the range and precision of delivering disease prevention and health promotion services for healthcare providers. Computer-mediated communication refers to communication forms that operate through computers and/ or a telecommunications network (Fotheringham, Owies, Leslie, & Owen, 2000). ICT approaches, such as the computer-mediated communications, have several advantages over the old-fashioned health

education approaches, such as face-to-face intervention. Some of these advantages include convenience, novelty and appeal, flexibility of use, automated data collection, openness of communication, and instantaneous interactivity.

### **Physical activity promotion as an example of interactive communication strategies for population health promotion**

Physical activity is an independent risk factor for the development of diseases such as cardiovascular disease. However, a large percentage of the population in the US and Canada fail to participate in regular physical activities (Marcus, Niggs, Riebe, & Forsyth, 2000). Without intervention, people often become sedentary. Thus, there is a need to develop effective interventions that reach a large number of the inactive population.

The use of ICTs has the ability to affect health behaviour changes, because technology is integrated in all aspects of society today. ITCs present an effective way of communicating with clients without being present physically, thus also empowering clients to change unhealthy behaviours. The emergence of new technology in health should focus on moving from the 'traditional face -to-face, downstream methods' towards more 'upstream methods' (Marcus, Niggs, Riebe, & Forsyth, 2000). Interactive technologies are ideal in influencing behaviour change in a large population because several new interactive technologies do not require face-to face intervention. For example, using ICT, Fotheringham et al (2000) developed a program that encourages behaviour change to maintain a healthy weight in a population. They developed a website containing important information about exercising. The website contained guidelines on ways to exercise and remain active at home, work, or in leisure, as well as research on latest health benefits of being physically active. It also included a range of interactive components that also accommodated novice internet users. The information was tailored based on individuals' stage of readiness for participating

in physical activity (Fotheringham, Owies, Leslie, & Owen, 2000; Prochaska et al, 2000).

## eHealth as a new ICT

Another emerging ICT is eHealth or Internet health care service. According to a World Health Organisation's (WHO) systematic review of the literature on eHealth, there are over 51 definitions for eHealth. However, WHO simply defines eHealth as the use of ICT for health. eHealth is a rapidly growing area of health communication, and like other new ICTs, it is transforming health care delivery. eHealth ranges from information posted online, on health issues and resources, support groups, and referral including diagnostics, treatment and drug prescription (Bashshur, 2002). Regardless of the numerous variations of the definition of eHealth, there is an agreement that eHealth represents "a commitment for networked, global thinking, to improve health care locally, regionally and globally" (WHO, 2006). WHO urged individual countries to create a strategy for eHealth, and has recently established the Global Observatory for eHealth (GOe). The GOe is dedicated to the study of eHealth, its resolutions, and its impact on countries. The goals of GOe include establishing a research network, developing a framework for analysis, establishing indicators for monitoring, promotion of best practices, policy making, and publishing reports on areas of interest in eHealth (WHO, 2006).

eHealth came into being because of the integration of various media around computers, such as the combination of email and text messaging. One can consider eHealth to be a revolutionized form of telemedicine. In 1995, a Chinese health agency sent an e-mail message to an international health agency requesting international help for a Chinese boy with a severe disease, and this led to the first recorded internet diagnosis. Currently we can routinely send messages through the internet and carry out live demonstrations and consultations through various media such as video conferencing (WHO, 2006).

## **Global trends in eHealth governance and policies**

The successful implementation of sound governance mechanisms in eHealth will undoubtedly lead to the success of eHealth in a country. WHO estimated that fifty percent of countries responding to the eHealth proposal have created some sort of governance mechanism for eHealth. As expected, high-income countries are more likely to introduce eHealth governance practices than low-income countries (WHO, 2006).

To ascertain that countries are taking action in particular areas of ICT, WHO established three policy frameworks. National information policy is a framework that governs a wide range of aspects concerning national information. National e-policy incorporates ICT across national government sectors; it was established by the government, with the intent of advancing the use of ICT. Finally, the national eHealth policy is a framework used for developing eHealth in a country, with the intention of achieving health goals (WHO, 2006). Again, as expected, developed countries are more likely than underdeveloped countries to have these three policy frameworks in place. Countries in Sub-Saharan Africa are slowest at adopting all the policy frameworks. WHO expects that the eHealth policy framework is most likely to grow faster than the other two policy frameworks (WHO, 2006).

WHO recommended the creation of eHealth bodies in individual countries to address the issues of countries not having specific governance and policy for eHealth. eHealth bodies, as indicated by WHO, would be responsible for guidance in policies development in eHealth, including data security, privacy interoperationability, cultural and linguistic issues.

## **Telemedicine: an age old approach in ICT**

Increasing costs, inequitable access to health care as well as the merger of information technology and health care gave rise to telemedicine. Despite being an old form of ICT, telemedicine continues to be utilized as well. Since the inception of telemedicine in the late 1960s, telemedicine has gone through different eras. Telemedicine has gone from the telecommunication era to the digital era and finally to the internet era leading to eHealth (Bashshur, 2002). Telemedicine delivers health care services when either the provider and client or the provider and provider cannot meet face-to-face because of geographical distance and other barriers. The pursuit of telemedicine is in an effort to deal with the diminishing access to health care in disadvantaged groups in several countries, the health care cost inflation, the widening gap in medical care in resource rich and poor countries, and the geographical variation in the quality of health care within and between countries (Bashshur, 2002; Godlee et al, 2004). The roles of telemedicine include information transfer, informed decision making, adoption of and maintenance of health behavior, peer information and emotional support, self help and self care, and demand for health services (Bashshur, 2002).

## **Telemedicine in a global context**

To understand the role of telemedicine it is necessary to describe the broader context of health care systems and their objectives. The World Health Assembly, at the Alma-Ata conference in 1977, developed a proclamation on global health (WHO, 1978). This proclamation was endorsed by 192 member countries. The proclamation affirmed that the major goal of WHO and governments was to attain a certain level of health for all by the year 2000 (Bashshur, 2002; WHO, 1978; Hall & Taylor, 2003). However, in 2008, over three decades later, people in resource-poor settings still do not have equitable access to basic health care

(Hall & Taylor, 2003). The declaration permits every person to lead a socially and economically productive life. "Health for all", a more realistic, reasonable and concrete plan was adopted in 1980 (Bashshur, 2002). "Health for all" not only focuses on disease eradication, but also on equity of access to essential health care services. Following this declaration, countries such as Canada and the United States have adopted similar initiatives including the "Healthy people" program (Bashshur, 2002). Now that the broader context of telecommunication has been discussed, it is important to know that the overarching purpose of these initiatives included disease prevention, health promotion, provision of care to the sick and disabled, and pain amelioration and palliative care provision.

## **Electronic communication from health care providers and clinics to patients**

New age technologies have revolutionized the ability of health care providers and patient to keep in contact with each other without necessarily dealing with geographical barriers (Pal, 2003). Computer and telecommunication networks provide support that enhances collaboration between health care providers and patients. E-mail represents one of the many ways in which health care providers can now bridge communication gaps with client or patients. Eighty five percent of patients agreed that e-mail is a convenient way for their health care providers to contact them and vice versa (Leong et al, 2005). An assessment of physicians and patients revealed that communication through e-mail was a more convenient and accepted form of communication than face-to-face visit to providers' offices. Although intended for short questions, brief updates, follow-ups, or clarification of instruction, email communications cannot replace office visits (Leong, 2005). Some people still prefer the old fashion way of contacting their health care provider. Similar to other new communication technologies, e-mail communication presents some benefits and concerns. Speed, simplicity, convenience, affordability, increased participation of patients in decision-making and linkage to patient educational materials are some of the

benefits of communication via email between patients and providers. The most frequently discussed concerns regarding electronic communication are privacy, security, legal liability and increased physician work load (Leong, et al, 2005).

The American Medical Association has created guidelines for email communication because of the acceptance of email communication. Acceptance of new health communication has also led to the introduction of other communication vehicles such as text messaging via cell phones.

### **Cell phone text messaging as a new communication approach for patients and health care providers**

Cell phones are being utilized more frequently in the general population. They are getting more powerful and smaller by the day. Millions of people walk around with small cell phones with the capacity of computers, and cell phones are the primary means of communication for some people (Downer et al, 2005). In New Zealand, a study found that over a million text messages are sent out per day (Field & Bycroft, 2007). Whereas email and internet are more limited in terms of access, cell phones are more accessible (Pal, 2003). Cell phones are used for digital photographs and video and computing, such as the digital signal processing. Cell phones are increasingly used to send text messages (Prensky, 2004). Globally, an estimated 1.5 billion people have cell phones and half a billion cell phones are sold annually (Prensky, 2004). Features of cell phones may soon be replacing behavioural interventions that use video (O'Donnell et at, 1995), and computer-based interventions. Various health organizations are beginning to incorporate cell phones, particularly the text messaging feature, into their daily administrative operations.

Text messaging is currently being piloted in youths' reproductive health services, especially in North America. Recently, Levine et al (2008) published an article on the use of cell phone to improve adolescent sexual health. Participants who were interested in the study texted a two-digit message to a five-digit number and they received information on their topic of choice including

information on HIV, pregnancy, and condom use. The authors concluded that text messaging is a culturally acceptable way for youth to receive sexual health information and referrals to sexual and reproductive health services (Levine et al, 2008).

## CASE STUDY

The Denver Metro Health Clinic is also in the process of creating a program similar to Levine et al.'s (2008) SEXINFO service. The clinic is considering the use of text messages via cell phone as a means of notifying patients of the status of STD tests results. An introduction of this approach of communication between providers and clients without adequate acceptance in the target group may result in lack of success in this approach. Therefore, in an initial formative research project, DMHC recruited some of its patients to participate in focus groups, to discover and document their reactions and thoughts about this new planned service improvement program. This project is an illustration of participants' reaction to the use of text messaging in a clinical setting.

## **LITERATURE REVIEW**

### **Text Messaging**

Short Messages Services (SMS) is one of the most widely used features of a cell phone today. SMS is a function of cell phones and it has the potential to promote administrative improvements in notifying patients of results from a previously carried out clinical test, such as STD tests (Field & Bycroft, 2007).

Text messaging has been applied to various public health behavioural interventions across countries and cultures. A randomised trial of smoking cessation intervention using text messaging showed that more people quit smoking at six weeks in the intervention group compared to the control group. Text-message-based smoking cessation program doubled the quit rate at six weeks and continued to remain high after six weeks (Field & Bycroft, 2007; Rodgers et al, 2005). In a study in New Zealand, Bramley et al (2005) reported a high temporary quit rate in a trial that compared the effectiveness of the cell phone text message in a smoking- cessation program in the Maori population, an aboriginal population, compared with a non-Maori population (Bramley et al, 2005; Field & Bycroft, 2007).

Similarly, a study on college smoking cessation provides support for using text messaging to deliver effective smoking cessation in college students (Obermayer et al, 2004). The study targeted college students, who were smokers unable to quit using the conventional smoking cessation programs. The quit rate among participants who received the intervention, which is a combination of web and text message interventions, was 36% after 6 weeks (Obermayer et al, 2004). The study also highlighted that the text message component compared to the website component was much easier to use and was a more acceptable intervention than the web component. Factors such as lack of accessibility or

convenience were seen as barriers to the acceptance of the use of a web site (Obermayer et al, 2004).

Multiple barriers to accessing smoking cessation programs have been reported by some smoking populations (Lazev et al, 2004). To increase access to treatment, text messaging was used in another study to test the feasibility of increasing access to smoking cessation treatments in low-income and HIV positive population (Lazev et al, 2004). At the end of a two- week period of treatment, which consisted of intensive counselling, there was a 75% abstinence rate. The cell phones provided allowed for the implementation of smoking cessation intervention for an underserved population.

Another area in which cell phone text messaging is deemed to have effective and efficient service is outpatients' attendance at clinic appointments. Failure to show up for hospital appointments results in hospitals' inability to use health care resources optimally (Downer et al, 2005; Martin et al, 2005). Currently, telephone reminders are used to reduce non-attendance at hospital outpatient clinics (Reti, 2003). There is also a potential for health care practitioners to be more effective in improving communicating with outpatients through the use of text messaging. Text message alerts have been used to remind patients of their upcoming clinic appointments in England and Australia; as a result patients' cancellation of clinic appointments decreased by 6% to 19% (Downer et al, 2005; Dryer, 2003). Text message alert was also found to be useful for reminding women to take their contraceptive pills (Pal, 2003). Although conventional telephone reminders are also effective in improving patients' appointment attendance, they require an efficient appointment scheduling system to improve attendance. On the other hand, text messaging is more efficient because it can be linked to a computer system which then generates and sends off automated messages to patients (Leong et al, 2006).

## **METHODS**

This project entailed an initial formative research to document the reactions and thoughts of patients from the Denver STD Clinic, about a service improvement plan that would include the use of cell phones to send text messages about health information, specifically STD test results, to patients. The method employed was focus group interviews, and the process employed will be described in a later section of this paper

### **Setting**

Two focus groups interviews were conducted in total. Denver Metro Health Clinic (DMHC) also referred to as Denver STD Clinic, was the site of the project. The focus groups were held at Denver Public Health, in a conference room on the second floor. DMHC is a part of Denver Public Health and a STD/HIV testing site for both high and low risk sexually active irrespective of their age in the Denver, Colorado, metropolitan area. Since the establishment of DMHC, it has reported more than 50% of all reportable STDs such as HIV/AIDS, gonorrhoea, chlamydia and syphilis in the city of Denver (Rietmeijer et al, 2006). Services offered by DMHC include comprehensive STD evaluation, express visits, independent HIV counselling and testing, family planning services, teen clinics, outreach activities, inmates' STD and HIV testing, and testing services at bathhouses (Rietmeijer et al, 2006).

### **The sample**

The criteria for participating in the study included owning a cell phone, sending text messages using the cell phone and being between the ages of 17-35. A list of participants who met the criteria of participants was generated

through Denver Public Health's patient information system, known as "Health Doc." Health Doc is a computerized system that contains patients' information.

As Shown in Table 1, Appendix 1. A total of Twenty-four clients agreed to participate in the focus group. When contacted via telephone, nineteen participants confirmed that they would attend the discussion session and of these fifteen participants, 79% of those who confirmed to attend, did attend and completed a focus group. Participants in the two focus groups represented different age groups in order to promote a better group discussion; so that for instance, the older participants did not dominate the group discussion. This encouraged everyone to contribute to the discussion. We also wanted to determine if there was a difference between the older participants' reaction and that of the younger participants. The ages of the participants in the focus group were between ages 18 and 25; the participants in the second focus group were between the ages of 25 and 35.

## **Recruitment for focus groups**

Participants were verbally contacted in the clinic waiting area. All the participants who agreed to participate were contacted via phone to confirm their attendance, nineteen confirmed to attend a focus group session. Fifteen participants attended. Table 1 in Appendix 1 provides demographic information about the attendees.

Participants were usually in the clinic for an appointment on the day of recruitment. While waiting to see a provider, participants were verbally asked if they were available on the days the focus groups were conducted.

We asked participants if they owned a phone or sent text over the phone. If they answered yes, we told participants that we were going to hold a discussion session. We also told them they would be given \$25 as incentive if they were willing to come and talk to us about the best ways that they thought we can use cell phones and text messaging to share important health information with clients from the STD clinic.

We were aware that with fewer than six participants in a focus group it would be difficult to generate a dynamic group discussion. We went ahead and conducted a focus group with five participants given that this was a research for a service improvement for a single health agency.

## **Conducting Focus Group Sessions**

### **Focus group set up and logistics**

Two different moderators facilitated each discussion session. One of the facilitators, who had extensive training and experience in conducting and analyzing focus groups, moderated the first focus group. The second group session was facilitated by the author of this paper. Each session had a primary observer and note-taker. A second observer who was in charge of technical assistance as well as assistance with participants who had questions that were not pertaining to the topic discussed was present in each session.

After each session was completed, the facilitators debriefed with the note taker and observer. Most of the recruitment was done by a single investigator in person, thus, participants were comfortable that she was present for both focus groups. They were able to connect with her during the session. The second facilitator was involved in each group which offered continuity for data collection and analysis. At the end of each session each participant was issued a check of \$25 and thanked for their willingness to actively participate in the session.

Participants were asked to complete a demographic form documenting their age, gender, and race/ethnicity prior to participating in the group. Identifying information, such as names, were not required on the demographic form. Table 2 in Appendix 1 shows a breakdown of participants' demographic information.

### **Facilitating the group discussion**

At the start of each focus group session, the moderator described the process of the focus group interview. As this is a quality improvement process and not a research study, we did not have written informed consent for participants. We did explain that if they were not interested in participating or if, at any point, they did not want to respond to a question posed to the group, they were free to be silent. We asked participants to raise any questions or concerns before the start of the session. The facilitator informed participants that we would not use identifiers such as their names in the documentation of the focus group process.

Since focus group discussions take the form of free flowing conversations, there were times when participants made comments that were irrelevant to the topic of discussion. Instead of interrupting the flow of the discussion, the facilitators rephrased the participants' comments and introduced questions that related to the discussion topic indirectly or directly. Participants frequently made comments on a topic that was relevant to the discussion that we intended to address later in the session. Rather than interrupting the flow of the conversation the facilitator asked the participant to "hold that thought" or informed him/her "we will get to that later" and then continued with the current topic of discussion. This system allowed for a linear process in addressing all the topics in the guide, which we developed before the sessions. A copy of the topic guide can be found in Appendix 3.

Typically, at the end of each session, the investigators held a debriefing session immediately after the session. The facilitator and primary observer described and compared notes taken during the session, describing briefly the general ideas expressed by participants as well as any other notable occurrences during the session such as participants' body languages. At the debriefing session, we also discussed the possibility of adding questions to the topic guide that came up frequently among participants for the next group's discussion. We typed out notes on each session within 72 hours of the focus group sessions.

## **Analysis of focus group data**

Coding consists of naming and categorising transcribed data. Before coding of the data, reading a portion of the transcript helped to generate an *a priori* codebook containing parent codes and sub codes. These codes are categories of themes, concepts, people, events, and actions that the researchers anticipated would show up during the discussions as well as in the data set. We employed open and axial coding methods.

We used open coding to break down the data and give separate meanings to individual segments of the data (Corbett, 2007). We did this by using names, concepts, and patterns of participants' experiences. These were compared to our session notes transcripts, topic guide, and margin notes. Using Microsoft Word Comment tool, we were able to label segments of the data.

Investigators created a hierarchy or family of codes so that there were parent codes, sub-codes, and in some cases, there were more sub-codes beneath the sub-codes. A "Comment" box in the margins of the document contained parent codes in bolded upper case letters. We derived parent codes from the questions from the topic guide; they preceded the sub-codes. The sub-codes were also in upper case but not bolded. In some cases, we had sub-codes under the already existing sub-codes and italicized the sub-sub codes in lower case. For example, some participants said they prefer text messaging to emailing, because it guarantees quick access to the information they need without looking for an internet access point. In this case 'LIKE TEXT' is a parent code, 'TEXT VS.EMAIL" is a sub code and 'quick access' is a sub-sub code. The sub codes under the already existing sub codes were not in the *a priori* codebook, they were codes that emerged after the creation of the *a priori* codebook.

Axial coding is the second level of coding once the basic categories are established. It focuses on the relations, connections between categories, as well as causal and intervening conditions. Axial coding enabled us to identify a range of opinions and experiences including outliers. Before conducting further focus groups, data from the previous focus group was analysed by reviewing topic

guides, observation notes and debriefing sessions. The initial debriefing session allowed us to use ideas from the previous focus group to refine the subsequent group discussion. We encouraged the subsequent group to react to the ideas that the previous participants expressed in the previous group discussion.

Following the initial coding of both transcripts using methods previously described, there was a need to examine emerging patterns in both groups. We grouped ideas with similar patterns together. For instance, we grouped the reactions about participants' likeness for text message and then we identified the connection and relationships between the different codes.

While most of the participants agreed on a topic of discussion, the process of re-examining the codes across the groups allowed for the identification of outliers in the data. For example, most participants agreed that it was a good idea to use text messaging to send STD prevention messages to young adults. However, one participant expressed an opposite view, saying, "personally I don't think it's a good idea, only because you said that there is kids having sex young ...we can't just assume that everyone is having sex."

In our analysis, there was constant re-examining of the topic guide. There was also the use of emergent data from the first group discussion to improve the discussion questions and, modify our coding framework for analysis. Analysis of this data sought to explore and describe the range of patterns of reactions, ideas, and concerns as expressed by the participants. We coded, indexed and retrieved segments of the text that contain key themes and concepts that are relevant to the topic in question. Many irrelevant topics came up during the course of each discussion group. We did not place emphasis on those topics. In order to bring the themes and key concepts together the investigators stepped back from Axial coding data. This allowed for a larger view, summary and description of the findings.

## FINDINGS

Table 2 in Appendix 1 highlights the demographic characteristics of both focus groups and participants. Seven males and three females attended the first focus group. In the second focus group, we had three males and two females, making the percentage of males who attended both of the discussion session higher than females, 66.7% compared to 33.3% of males and females respectively.

Approximately 50% of the participants in focus group one were Caucasian/White, the other 50% comprised of Hispanics/Latinos, African Americans/ Black and other races or ethnicities. In focus group two, African Americans/Blacks were the dominant race in the group, making up over 50% of the group.

Eight out of the ten participants in focus group one were between ages 17-21 and the remaining two were 21 -25 years. Similarly, in focus group 2, three of the five participants were between ages 25-31, one participant was in the age range of 21-25 and lastly one participant fell in the 31-35 age range.

The list below represents the six themes that emerged during the discussion sessions.

- 1) What participants thought about text messages as a public health STD prevention strategy,
- 2) Reasons why participants like the idea of getting test result via text messaging,
- 3) Participants' perceived concerns about text messaging as a Public health tool,
- 4) Participants' suggestions regarding structuring the program,
- 5) Participants' message preference, and

- 6) Reasons participants would or would not be motivated to respond to text messages.

## What participants thought about text messaging

Participants in both groups agreed that text messages could be used to send prevention messages to people, especially to those that are sexually active between the ages of 13 and 30. Participants felt this age range is the most sexually active group. There were suggestions as to what specific group the program should target. ‘High school students as well as college students should be the primary target population’. Comments across both groups indicated that most participants agreed that the use of text messaging has potential as a means of sending prevention messages to clients. Table 3 in Appendix 1 shows some of the participants’ comments regarding text message as an ideal public health tool.

*“I think if you send it to everybody, I don’t see any negatives coming from it [there nothing wrong with sending prevention messages to everyone via text message].”*

*“I guess it will be mostly between like people that are like having like sex, I guess... between age 16 & 30.”*

The number of people who receive these text messages shapes participants’ understanding of an ideal preventative strategy. Participants suggested the clinic should send random messages to everyone; this is due to the understanding that very few people are not engaged in sexual activities in the age range they talked about. They also perceived that messages coming from a health care facility like Denver Public Health will and should indicate that STD testing is free of charge. They suggested that testing at no cost would encourage more people to be tested for STDs.

Most of the participants agreed that sending prevention messages to everyone is acceptable. Only two participants stood out of both groups and opposed the idea of sending random messages. This was because they thought

clients would perceive that DH assumes everyone is engaged in sexual activities. Participants thought this might scare off clients who would have otherwise come to the clinic for testing.

### **Reasons why participants liked the idea of receiving test result via text message.**

Although a couple of the participants were hesitant about receiving random text messages from an STD clinic, generally most of the participants were accepting of the idea of receiving notification regarding their test result via text message. Table 4, Appendix 2 illustrates some of the reasons why participants say they “will not mind receiving a text from Denver Health.” Participants perceived that if they could receive a random text message from a friend, it is not a problem to receive a text message about an STD test they already did.

The most frequently made comment about the reason for liking text message between both groups was the ease that comes with using text message. Participants noted that sending text messages is part of their daily routine and is not a new idea. Some reasons why text message use is easier for participants are ease of being able to receive a text message at any time and replying with minimal disruption of their current engagement.

*“For me, if I am sitting in class and I get a phone call [and it is a missed called], I don’t know what it is about...but if get a text message [I] can see what it has to say ...you don’t have to take time out [to attend to it].”*

There was a general perception that it is easier and more private to check a text message than to check voicemail across both groups. For some participants it rules out the possibility of the next person overhearing the conversation over the phone about their test result. Another reason why

participants like the idea of text messaging is convenience. A participant equated convenience with not missing an appointment

*"I can just have a text message and just have it right there. So therefore, I won't miss the appointment."*

## **Participants' concerns about receiving test result via text messages**

Although most participants were in agreement with using text messages in public health, they also expressed some concerns. The most frequently talked about concerns in both groups were privacy, being scared of the outcome of their results and the likelihood that someone may find out what the result is before they do if in fact it is positive, confidentiality issues, including sharing cell phones with others, and cost as well as access to text messages.

There was consistency in both groups regarding their perception about lack of privacy when they receive a text message. This is because of the possibility of a friend or family member picking up the phone when a text message alert pops up. Participants all agreed that they like their privacy when it pertains to their cell phones. They also agreed there are times when family members or friends tend to pick up their phones for use without their knowledge. One participant said "Anybody could pick it up", and at that point the person knows what the text message entails.

*"The problem with getting your result [via text message] is that you are not the only person that looks at your text message, other people around you [do too], it just happens and people see it. Usually if somebody gets a text message like that, it could ruin your whole like personal life."*

Participants were not only concerned about the privacy of the messages that come through their cellular phones. They were also concerned about the impact that someone else finding out about the result could have on them. Further, while some people were scared about the consequences of someone

other than themselves finding out about their result, other participants expressed concerns about merely getting their result back. The groups discussed negative feelings that they had concerning confidentiality issues. They suggested that this is an issue for Denver Public Health resolve in order to protect the interest and privacy of clients. "It needs to be as confidential as possible". Participants also expressed confidentiality as a way of message preference. Participants all agreed that messages sent from STD clinic do not need to include 'Denver Metro Health Clinic', which is easily identified as an STD clinic.

*"When we talk about confidentiality, there are people that come to the clinic, they don't want any one like their parent to know, so text message could be like the best [option] for those people that don't want their parents to have a clue [as to what's going on]."*

Participants commented that if the text messages from Denver Public Health are confidential as well as non-specific, then for those clients that share their cell phones the probability of friends and family knowing what the message is about is less. Participants who share phones with other people noted that they share phones because they cannot afford to own a cell phone and will not be able to access a cell phone if DH introduces a program such as this. Thus, another concern was the cost factor. There were comments regarding making text messaging to clients free for better access to the information, but none of the participants suggested that DH offer free cell phones to clients in the program. Table 5, Appendix 2 shows some of the participants' concerns.

### **Participants' suggestion for program structure**

Because of the concerns that participants expressed regarding text message, they gave suggestions that they felt might work for a program that includes text messaging in the service delivery. Some of the suggested changes to the program included professionalism, a sign up option, generation of PIN numbers,

continuing with the old system for those who are unfamiliar with text, keeping the system simple, and including clinic information in the text for easy access.

Participants all agreed that there should be a sign up option to have notification about their results via text message. Participants suggested giving clients this option at the time that they register to see a health care provider. “*When they take their test and fill out the tag, there should be a little area on the form where it says would you like a text? Yes / No*”. Giving patients that option eliminates issues that may arise later because of the text message. “As long as they can decide, let the patient make the decision.” An easier way, one participant suggested, is to have patients check off boxes that say either ‘Yes’ I want to receive a text message about my result’ or ‘No’ I would like to receive a call from you about my test result.’

*“I would say certainly, you should have that option available when one is signing up for everything [else], you say yeah I think I will be fine if I receive a text message. One that says ‘your results are in, give us a call’. That is better than getting a call at an inconvenient time.”*

Participants said they would not be surprised when they receive a text after they signed up to receive a text message from the clinic. Although most participants were hesitant about receiving specific message about their test result via text message, some were in favour of receiving a text message that tells them that their test is negative. “I think if we sign up for it and we’re negative, just tell us [it is] negative”. “I think if they sign the paper they should know”. There was a consensus regarding professionalism when given the option to sign up. They felt it would be unprofessional to send a text message without the patient’s permission to do so.

The investigators wanted to know what participants’ reaction was regarding shorthand messages and abbreviation such as ‘l8r’ for ‘later’, and ‘lol’ for ‘laugh-out -loud’. Participants across the groups felt that they would be insulted and feel discrimination if the clinic did not use the standard language to send the text message to them.

*"No matter who you're talking to, [for me], I'm going to talk to you the same way I talk to her or to a 13 year old. Anybody that walks in my office I'm going to talk to them the same. And if I started talking to somebody different, I would be discriminating and that's a whole different issue."*

In sending out the text messages, participants suggested that they should be grammatically correct; no use of abbreviations, even though they appear to appeal to a younger population. Participants commented that from a professional standpoint, people would frown on abbreviation use. "I think that especially as a hospital you shouldn't use short hand."

*"...I guess it depends on who you are trying to market it to, because most of the peoples at the STD clinic are around our age, you know like 18-30...maybe it will seem cool to them or whatever, but you are talking of sounding professional and that is not going to be okay... If you are trying to reach a [certain] audience, maybe that is something that will attract people to it [the program]."*

In light of presenting the text message in a professional manner, participants also commented on the content of the message. When the group talked about concerns with text messages from Denver Public Health, they mentioned the issue of privacy. They mentioned that the message in the text could cause problems for them if it is a specific message, stating what their result is. Another suggestion from participants was to make the text message general enough that someone else whom the message is not meant for does not know what the message means. Another participant said, "I think as long as we are talking about having a general message, I don't see that it's any less professional than a phone call."

There were several statements by participants suggesting that even if patients do sign up for the text-messaging program at the time they visit the clinic, there should be an option to access the message only by the individual patient. Participant suggested creating PIN numbers for those who sign up to receive text messages. Participants said they would feel better knowing that they are the only ones that can access the message regardless of whether the

message is positive or negative. In order for patients not to forget what their PIN number is, a few participants made comments about allowing patients to create their own password.

Participants across both groups agreed that if there is a lock to messages then there should be no limit to how much the message conveys. Other participants disagreed, saying that the message should not be too specific in terms of what it conveys regarding the outcome of their test. In both groups however, there was a consensus that the address and hours of operation of the clinic should be included in the message provided they have a password to access the message.

*"I mean, I think at that point maybe using a Pin number, like you were talking about wouldn't be a bad idea, but without something like that there is no way to keep your confidentiality."*

*"I think it is a good idea to add all that information [address and hours of operation] because even if someone else sees it, it looks professional. It doesn't say anything about the result. I don't think we should loose that information."*

Participants made comments regarding how they think some people would buy into the idea of text messaging but others would not. Reasons for these included; a sense of old tradition, that is, receiving information the old fashioned way via a phone call or face-to-face transfer of information; affordability of cell phones and/or the cost that comes with having additional features like text message; and the lack of knowledge of how to use the text message feature of a cell phone. For these reasons, participants suggested that the old system of calling patients should also be in place for those who do not like the idea.

### **Participants' preferences of how they want the program planners to present the message in the text message**

Although they expressed some concerns about the program, participants generally like the idea of receiving a text message about their previous test results. Thus, they made a few suggestions on how we should structure the

program be to ensure that patients agree to sign up to receive text messages from the clinic. They perceive that even though structuring of the program meets the client or patients' needs, the program needs more improvements regarding the message itself in the context of the message.

We provided participants with a sheet containing options of the kinds of messages that might be included in the text message when notifying patients of their test results to get their reactions and ideas of what sounds the most professional, yet appealing and general. Examples of phrases we included in the sample message sheet were: a) Call Denver Health; b) Call for an Important Health Message!; c) Your test is positive/ negative; d) your results are in! ;e) Denver Health vs. Denver Metro Health clinic.

Participants noted that most of the suggested messages from the investigators contained Denver Health or Denver Metro Health Clinic (STD Clinic). In most cases, the participants preferred for the message to contain only Denver Health, not Denver Metro Health Clinic. The latter is too specific; and most likely reveals the meaning of the message the clinic sent as well as the content of the message. "Call Denver Health" was by far the most preferred message.

*"It is not saying [positive or negative], and it is not saying [specifically] where it is from it is from. It is not saying [whom] it is for. I get a lot of calls for someone else [on my phone], it is not for me but it is very general. They could call this number and not know [whom] to ask for or [whom] they want."*

The groups agreed that Denver Metro Health Clinic is too specific. If someone else that the message is not meant for gets the message and it states 'Denver Metro Health Clinic', automatically that person knows that the text message receiver had gone for STD testing. They preferred Denver Health, which is a more general term. Participants suggested that "people don't know you are going to the clinic for a test, it could just as easily be about my teeth." Table 7, Appendix 2 contain some more suggestions for message preferences.

*"Option number two is good maybe because it says Denver Health instead of Denver Metro Health clinic, so it's kinda a little more general... someone might not just pick that out and say oh, STD clinic! If it just says Denver Health, it's a little more general... I am not sure how I feel about the 'for an important health message', maybe just 'please call Denver Health at 303 436 000'."*

The groups had a negative reaction towards the phrase “important health message.” Making the message sound urgent was not appealing to participants. Some said that it just scares them and makes them not want to call because if it is an urgent message it means the result is most likely positive. “That makes it sound like...I need to see you urgently.”

Across the groups, there were general agreements that if the message was in codes then it could say something like ‘your results are in’, or ‘call Denver health’. Most of the participants agreed that at no time should it say over text messaging that the result is positive. A couple of participants opposed and said that it could say your test is negative if in fact it is and if the message is inaccessible to others and they are the only ones with access to the message. If it is positive there should be no excitement or exclamation points added to the message, and they should be requested to go in and see a health care provider rather than knowing about it over the phone or text message.

*“You don’t want a message coming in saying ‘your results are in, give us a call with an exclamation point. I know exclamation points is a little thing, but right now it is a big thing [it is significant], I probably won’t want to see [an exclamation] mark right now.”*

Participants generally liked the message to be non-specific, neutral and vague, with no excitement or anxiety indicators. Participants said some of the sample suggested messages that we showed to them will definitely throw people off balance, some give hope, even when it is not necessary to give the patient hope, others they said makes the patient feel as if they are positive with the disease.

## **Reasons why participants would or would not be motivated to respond to text messages**

When we asked participants what would make them respond to a text message from DH regarding their test results we got comments that we linked to their concerns and suggestions about the program. The participants said that the first obstacle to responding to a text message is the cost of receiving a text message and sending one. They suggested that if DH made it affordable they would respond to text messages from DH. Secondly, they mentioned that there should be an option for them to sign up. If they do sign up, then they expect to receive a text message and they will respond. Third, participants said there should be an option for them to text back if they do not want to pick up the phone and return the call. Clients may not want to text back or come in when DH asked them to do so. Therefore, information about the services provided should be included in the text message so that they have flexibility of calling when convenient. Lastly, if the text message tells them to call and they do call, they want to talk to a live person not an automated machine.

Participants suggested that for them to be motivated to respond back DH should liaise with the phone companies in terms of cost reduction. They indicated “there might be a way that you can be able to send them a free text message.” In that case, they will not be responsible for text message charges when they receive text message from Denver Health or send a message to DH.

Although the group agreed that it is better to receive a text than a phone call, they also had mixed reactions about texting back as opposed to wasting time calling back or listening to messages on their voicemail. While some of the participants would like to get the text and call back for an appointment if there is a need to call and talk to a Physician, others wanted the option to respond to the text message by sending a text as a reply.

*“I’d just make sure that they could make an appointment, because if somebody is [nervous] with not knowing and they are trying to figure out their results, they could come in and talk to a doctor or something like*

*that. Even if they are comfortable, they still have the option to make an appointment for next time.”*

Depending on whether they are positive or negative, there were comments that suggested that when clients respond to the text message via text message the clinic should have an automatic message that instruct clients to come in for a follow up appointment, especially if the test came back positive. “If they respond back you could just have an automatic text that will be like ‘you need to come in.’” Due to cost, some participants only receive text, meaning they do not use the calling feature of their phone, and they said this program would work perfectly for them.

The last response motivator for most of the participant was having a live person to answer the phone when they call about their test result or to make an appointment. After sending a text participants thought that it is better to have someone on the other end of the phone that they can communicate with especially when they are nervous. Table 8, Appendix 2 illustrates comments about response motivators.

## **SUMMARY OF FINDINGS**

In general, the groups were in agreement regarding the use of text messaging at the DHMC. A reason that participants thought this program could lead to improvement in the health system was that text messaging was easy to use, that is, it was a part of their daily routine. They also considered text messaging more private than a phone call, which makes it more convenient. This is because clients have to choose to receive the text message without interrupting whatever activity they were engaged in when they text message arrives. This means that participants would have control over the process of text messaging. Other participants felt it is a quicker process to receive a text message than a phone call or an email.

Although there was a general acceptance of the concept of text messaging health information over the phone, participants had some concerns regarding the process. Participants felt that they would be nervous about their test results and they were not sure if text messaging via cellular phone is the best way to inform them about their test result, especially if the result of the test is positive. Participants also talked about sharing their cell phone with friends and family members and that this could pose a problem if the message arrived when the phone is in the possession of another person, their information would end up in the wrong hands. Access to cell phones was another concern that participants commented on. Not everyone can afford to have a cell phone and we know that we cannot send a message to patient A, using B's phone number. Another issue was the cost of receiving a text message. Participants alluded to the fact that phone companies charge approximately 10 cents for every text message that they receive, suggesting that it is expensive.

Participants viewed a properly structured program as a factor that may lead to its success. They talked about professionalism in terms of how we should phrase the message. Even if the program targets a younger population, participants were very assertive about avoiding the use of abbreviations and short hand. Other suggestions included including information about Denver Health. For example, they suggested including the address and hours of services of the clinic, so that when clients decide to drop in, they have that information available to them. In order to be sure that sending a text message will not pose a problem for clients, participants suggested a sign up option. Informing patients about the text message option allows patients to choose, eliminating future issues with privacy. Although the option to sign up would be in place, a lot of emphasis was placed on protecting the patient's privacy by generating PIN numbers or passwords for each client to access text messages directed to them from the clinic.

Participants suggested that certain phrases and words were not acceptable in the sample text message that we had created prior to the discussion sessions. There was a lot of focus on making the text message appear neutral and general. Participants viewed some phrases in the text message as indicators of the outcome of their test and did not want to detect any emotion in the message that would leave them feeling anxious about their results. They thought that in addition to structuring the program in a professional manner, restructuring the message itself might lead to the success of this program.

When asked what will motivate patients to respond to the text message after they have agreed to receive text messages from the clinic, their responses included reducing the cost of receiving text messages from Denver Health and sending a text message to Denver Health. They also wanted the option to reply to a text message at their convenience. If given the opportunity to call Denver Health, they wanted to have access to speak with a live person as opposed to an automated machine.

Overall, there was consensus between the groups regarding the possibility of improvement of services in the clinic using text messages as an efficiency tool. There were no difference in opinion in the older group compared to the younger group. However, we need to make adjustments as requested by participants in the focus groups to accommodate patient's needs. Modifications to the program as suggested by participants may lead to improvement of services at Denver Metro Health Clinic.

## **Personal reflection and recommendation for future research**

As a Global Health graduate student, I could not help but reflect on how we as researchers can apply a program such as this one to resource-limited settings. According to the literature, access to health care and availability of health care in Africa and other parts of the world is at a slow progress. African health care systems suffer because of lack of resources, but also because of lack of efficiency in the management of limited resources. African countries lag behind in terms of adopting information and communication technologies. Other researchers have linked ICTs to achieving health equity. Therefore, to bridge the existing gap in health care, there is a need to utilize resources that already exist.

Cell phone use is becoming popular even in resource-limited settings. People are also using the text message feature more than the calling feature on cell phones because the former is cheaper. As such, we ought to carry out more research as to how we can integrate the use of cell phones into health care, access to health care and health care delivery in resource-poor settings.

Focus group interviews similar to what we conducted at Denver Health are a good place to begin. Because of cultural differences, it is important to obtain the reactions of the target population concerning a program such as this. In order to come close to achieving the mandate of "health for all" by the year 2015, as proposed by the WHO, let us extend studies such as this to places where they need them the most.

## **CONCLUSION**

Globally, the WHO declaration of “health for all” by the year 2015 cannot be realised without the presence of ICTs such as eHealth and telemedicine. WHO has mandates that promote eHealth in countries globally, and its proposal for equal access to health care can be realised using ICTs such as telemedicine. WHO’s proposal for equal access to health services for all has not been realised yet, but it has inspired countries to adopt similar initiatives such as “healthy people” with an over arching purpose of providing equal access to health care services, promote health, prevent diseases and injuries and provide rehabilitative care for the injured.

Communication technology has proven effective in computer-based interactive health behaviour intervention. The availability and the speed of the internet make it ideal to achieve successful health behaviour intervention without being present physically. E-mail communication between provider and clients is also making provider-client contact more convenient. With the acceptance and feasibility of these new communication technologies, other unconventional means of communication including cell phone text messaging are emerging.

Text messaging via cell phone between providers and clients is a new concept. However, research shows that generally more people rely on this means of communication. Studies are also testing the feasibility and acceptance of this approach of communication. In order to ascertain that the targeted population would accept text-messaging, researchers ought to explore this method of new age health communication. With more research, there is also the possibility of introducing such a program in resource-limited countries globally to hasten the process of achieving health for all.

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## **APPENDIX 1**

**Table 1: Recruitment and attendance of participants**

	Focus Group 1 (Age 18-24)	Focus Group 2 (Age 25-34)	Total
Number of persons recruited for focus groups	14	10	24
Number of persons confirmed to attend focus group	11	8	19
Number of persons who attended focus group	10	5	15
Percentage of persons recruited to attend focus group who actually attended	71.4%	50%	62.5%
Percentage of persons confirmed to attend focus group who actually attended	90.9%	80%	79%

**Table 2: Demographic characteristics of focus group participants by session.**

	Focus group 1	Focus group 2	Total
	N (%)	N (%)	N (%)
<b>Gender</b>			
Male	7 (46.7%)	3 (20.0%)	10(66.7%)
Female	3 (20.0%)	2 (13.3%)	5 (33.3%)
<b>Race/Ethnicity</b>			
White	5 (33.3%)	1 (6.7%)	6 (40.0%)
Hispanic/Latino	3 (20.0%)	1 (6.7%)	4 (26.7%)
African American/Black	1 (6.7%)	3 (20.0%)	4 (26.7%)
Other	1 (6.7%)	0	1 (6.7%)
<b>Age</b>			
18-20	8 (53.3%)	0 (0%)	8 (53.3%)
21-25	2 (13.3%)	1 (6.7%)	3 (20.0%)
26-30	0 (0%)	3 (20, 0%)	3 (20.0%)
31-35	0 (0%)	1 (6.7%)	1 (6.7%)

**Table 3: Participants' perceptions on text message as an ideal Public Health STD prevention strategy**

<p>"I think if you send it to everybody, I don't see any negatives coming from it" (<i>there nothing wrong with sending prevention messages to everyone via text message</i>)</p>
<p>"They may not even know where the clinic is so that they can get free testing service" (LOCATION &amp;HRS)</p>
<p>"...the general question that you just asked about just sending it to everyone... me personally I don't think it's a good idea, only because you said that there is kids having sex young, ...we can't just assume that everyone is having sex"</p>
<p>"It's all on the person if they want to get their result through a text message or you want to hear it from a person's voice. I personally would probably go for the voice instead of text message"</p>

**Table 4: Perceptions of participants who like the idea of getting test result via text message.**

<p>"Yeah it's a lot easier to check a text message than a voice mail."</p>
<p>"People use their cell phones a lot so, ... they will tend to get that message faster"</p>
<p>"I'm pretty busy where I am at... I can text message pretty fast instead of calling somebody, because it take forever"</p>
<p>"Yeah text message is way more private than e-mail and a lot of people can check your e-mail."</p>

**Table 5: Quotes showing Participants' perceived concerns about text messaging as a Public health tool**

"That would be kind of scary.", "people get scared that <i>other</i> people are going to find out..."
"...for me it need to be as quick general and kinda like confidential as possible"
"...maybe if they share a cell phone with someone... they <i>may</i> want to keep it confidential, then yeah maybe they will like their privacy and not like <i>their result through text message</i> "

**Table 6: Illustration of Participants' suggestions for program structure**

"...certainly have the option available when you are signing up ... I think it'd be just fine if you receive a text message, ... that is better than getting a call at an inconvenient time"
"it may be like a random generated number, or pin number, or they can maybe make their own password, <i>if they create</i> their own they might remember it more."
"when it comes to abbreviation or short hand just spell it out and once again just be really simple..... an example of the professionalism thing"
"I think as long as we're talking about having a general message. I don't see that it's any less professional than a phone call."
"So you might just say on the message 'please call Denver Metro Health from 8:00 a.m. to 5:00 p.m. or between 8:00 a.m. to 5:00 p.m.' or whatever times that you would have to call".

**Table 7: Participants' message preference**

" I wouldn't want it to say positive or negative, just be like 'call the Denver health'"
" I think you should text message them and I think you shouldn't put what it involves"
"You don't want a message coming in saying 'your results are in/ give us a call about your result, with an exclamation point,...you have to sound extremely general"
" I think maybe # 2 is good maybe because it says Denver Health instead of Denver Metro Health clinic, so its' kinda a little more general,... someone might not just pick that out (it is from the STD clinic) "
"I think you should scrap out 'important' and just have please call Denver Health, you know why you're calling why do you need to know if it's important or not. It will just scare me the more."

**Table 8: Participants response motivators**

"Some people they don't have text messaging because it <b>costs them</b> money to have the text then come in."
"Well, when I open it takes 10 cents off my account, so if I open up the text message it take money off my account"
"None of these messages give you the option to respond"
"...after you text message me I want you to be live <i>on the other end of the phone, no automated messages</i> ", "Yeah I'd rather speak to a live person"

## **APPENDIX 2**

### **Recruitment guide**

**Do you use a cell phone? Do you send text message over the phone?**

**IF YES:**

We are holding a focus group—a group discussion—next week, and will pay \$25 for your time if you will come and talk with us about the best ways we can use cell phones and text messaging to share important information with patients from this clinic.

The group will be at 11 am. We will have pizza and a conversation for about an hour and a half. There will be about 10 other people there, including the facilitator and me

**IF NO:**

OK, thanks for your time.

## **APPENDIX 3**

### **Topic guide**

We are working with the STD clinic staff on ways to make the process for getting results from STD tests easier. We are thinking about using text messaging over cell phones to send important messages to our patients.

First, tell us what you think about the idea. What would you think of getting information about any tests you had in the clinic downstairs in a text message over your phone?

Probes: What do you like about the idea? What are your dislikes? What are concerns you have about this idea?

Now tell us what types of messages would be acceptable. Let us say you have been tested for Gonorrhoea in the clinic, we want to send you a text message to let you know about your results. What should the message be?

Probes: Tell us what you think of these ideas for text messages:

1. -Please call the Denver Metro Health clinic for an important health message at 303-436-7000
2. -Please call Denver Health for an important health message at 303-436-7000
3. -Your results are in! Please call the Denver Metro Health clinic at 303-436-7000
4. -We need to see you! Please call the Denver Metro Health Clinic at 303-436-7000
5. -Your test was negative! Please call the Denver Metro Health Clinic at 303-436-7000
6. -Your test was positive! Please call the Denver Metro Health Clinic at 303-436-7000

Which of these do you like best? Which do you like the least? Are there other message ideas you have?

How can we make sure that the message stays private, for example, if someone else uses your phone?

What should the message say so you will respond and actually call in?

Tell us about what you would expect when you call in. If it is during the night-time or on a weekend, you won't talk directly to someone, but will get a voice message. What should that message say? If it is during the day, but we cannot get to the phone, what should the message say?

Tell us about other ways you can think of to use text messaging that might be useful for you as a patient in this clinic.

Probes: Get other information on STD prevention via text messaging?  
What do you think about been able to access your own information over the phone?