

Researchers

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Timeline

2012-2014

Sample Size

1,110 individuals

Data Repository

<https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi%3A10.7910/DVN/M4LY...>

Research Implemented by IPA

Yes

Text Message Reminders for Malaria Treatment

Key Finding Summary

Text message reminders in Ghana increased adherence to malaria treatment by five percentage points. Further research is needed to develop the most effective text message content and frequency, and to shed light on why people fail to complete their medication.

Abstract

Only one drug—artemisinin—is fully effective in treating malaria in Sub-Saharan Africa, and is therefore central to the global fight against malaria; however, many patients do not complete the full course of malaria treatment. Non-adherence may increase the risk of drug resistance, greatly undermining efforts to combat the disease. This randomized evaluation in northern Ghana was a first attempt to evaluate the impact of text message reminders to patients on adherence to malaria treatment. Results indicated that text message reminders increased adherence to ACT treatment by five percentage points on average, relative to the

comparison group. Further research is needed to develop the most effective text message content and frequency, and to shed light on why people fail to complete their medication.

Policy Issue

In 2013, malaria killed more than 600,000 people across the globe – over half of them children under five [2]. Despite massive international efforts over the past decades to combat the disease, malaria remains a primary cause of death of young children worldwide. The great majority of global deaths from malaria—92 percent—occur in Sub-Saharan Africa [3]. The majority of malaria deaths in Africa are caused by the most virulent malarial parasite, *P. falciparum*. The parasite has already developed widespread resistance to several classes of antimalarial drugs, leaving artemisinin-based combination therapies (ACTs), as the only fully effective treatment for malaria in the region. Patients must complete their full course of medication to prevent resistance, but many stop taking the drugs once they feel better. There is already evidence of *P. falciparum* resistance to artemisinin in Southeast Asia. Public health experts are deeply concerned resistance will also develop and spread in Africa.

This study investigates the impact of text message reminders on ACT treatment completion. The Clinton Health Access Initiative, the main partner in this evaluation, is using results from this study, and related studies in Uganda (see [here](#) and [here](#)), [Kenya](#), and [Zambia](#) to inform global policy on malaria diagnosis and treatment.

Context of the Evaluation

Malaria is a main cause of illness in Ghana, especially among young children. Two programs have increased patient access to ACTs to treat malaria. First, Ghana was a pilot country for the Global Fund's Affordable Medicines Facility – malaria (AMFm), which aimed to expand access to ACTs by highly subsidizing their cost. Second, Ghana has been rolling out a National Health Insurance Scheme since 2004, which allows registered members to receive ACTs free of charge. This study took place in and around Tamale, the capital of Ghana's Northern Region.

Details of the Intervention

This randomized evaluation, carried out among 1,140 participants over a five-month period in 2011, evaluated the impact of text message reminders on whether patients finished their ACTs.

IPA surveyors recruited participants at public and private hospitals, clinics, pharmacies, licensed chemical sellers, and other vendors. Vendors identified individuals purchasing malaria medicine, gave them a flyer with instructions to enroll in a mobile malaria information system, and directed them to surveyors. The surveyors administered an initial questionnaire to willing and eligible participants .

Those who enrolled in the text messaging system were randomly assigned to one of the

treatment groups or the comparison group. Participants randomly assigned to the one of the treatment groups received one reminder every 12 hours (for each of the six doses of ACT) over the course of 60 hours. Half received a short message, “Please take your MALARIA drugs!” and the other half received the same message with an additional statement, “Please take your MALARIA drugs! Even if you feel better, you must take all the tablets to kill all the malaria.” The 538 participants in the comparison group received no message during this period.

IPA surveyors followed up with all patients in their homes between three and four days after talking with IPA at the vendor, when the course of the ACT treatment was supposed to be completed. Surveyors assessed adherence by gathering a detailed self-report. They supplemented this information with a full inventory of drugs in the household and by asking to see the leftover ACT pill packet. IPA also asked respondents about malarial symptoms, care-seeking patterns, awareness of malaria, and malaria medications.

Results and Policy Lessons

Results indicated that simple text message reminders increased the odds of adherence to ACT treatment by five percentage points relative to the comparison group. Receiving a longer message did not have a significant impact relative to the comparison group.

Of the 538 participants in the comparison group, 61.5 percent reported treatment completion. Of the 572 participants in the treatment group, 66.4 percent reported treatment completion. Of the participants that received the longer message, 64.1 percent completed their treatment, which was not a statistically significant impact.

The impact of the text message reminders varied across different groups. For example, the short text message reminder more than doubled the odds of adherence among women but did not having a statistically significant impact on adherence among men. Among participants from private clinics, the text message reminder increased completion by 14 percentage points, whereas among patients from public hospitals, the increase was less than 2 percentage points in relation to the comparison group.

In short, the results of this study suggest that a simple text message reminder can increase completion antimalarial treatment, which is important both for patients being fully cured as well as maintaining the efficacy of ACTs for everyone. Further research is needed to develop the most effective text message content and frequency.

Sources

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