Contraception 93 (2016) 44 – 51

Contraception

Original research article

# Providing free pregnancy test kits to community health workers increases distribution of contraceptives: results from an impact evaluation in Madagascar☆

Alison B. Comfort[a,*], Slavea Chankova[b], Randall Juras[a], C. Natasha Hsi[b,1], Lauren A. Peterson[b], Payal Hathi[a,2]

[a]Abt Associates, 55 Wheeler Street, Cambridge, MA 02138, United States
[b]Abt Associates, 4550 Montgomery Avenue, Bethesda, MD 20814, United States

Received 20 May 2015; revised 16 September 2015; accepted 17 September 2015

## Abstract

**Objectives:** To improve access to contraceptives in remote and rural areas, sub-Saharan African countries are allowing community health workers (CHWs) to distribute hormonal contraceptives. Before offering hormonal contraceptives, CHWs must determine pregnancy status but often lack a reliable way to do so. No studies have evaluated the impact of providing CHWs with urine pregnancy test kits. We assessed the impact of giving CHWs free pregnancy test kits on the number of new clients purchasing hormonal contraceptives from CHWs.
**Study design:** We implemented a randomized experiment in Eastern Madagascar among CHWs who sell injectable and oral hormonal contraceptives. A total of 622 CHWs were stratified by region and randomly assigned at the individual level. Treatment-group CHWs were given free pregnancy tests to distribute (*n* analyzed=272) and control-group CHWs did not receive the tests (*n* analyzed=263). We estimated an ordinary least-squares regression model, with the monthly number of new hormonal contraceptive clients per CHW as our primary outcome.
**Results:** We find that providing CHWs with free pregnancy test kits increases the number of new hormonal contraceptive clients. Treatment-group CHWs provide hormonal contraceptives to 3.1 new clients per month, compared to 2.5 in the control group. This difference of 0.7 clients per month (95% confidence interval 0.13–1.18; p=.014) represents a 26% increase.
**Conclusions:** Giving CHWs free pregnancy tests is an effective way to increase distribution of hormonal contraceptives. As pregnancy tests become increasingly affordable for health-care systems in developing countries, community-based distribution programs should consider including the tests as a low-cost addition to CHWs' services.
**Implications:** No study has evaluated the impact of giving CHWs free urine pregnancy test kits for distribution to improve provision of hormonal contraceptives. Giving CHWs free pregnancy test kits significantly increases the number of clients to whom they sell hormonal contraceptives. Community-based distribution programs should consider including these tests among CHWs' services.


*Keywords:* Pregnancy tests; Community health workers; Hormonal contraceptives; Sub-Saharan Africa; Family planning

## 1. Introduction

One out of every 39 women of reproductive age in sub-Saharan Africa will die during pregnancy or delivery [1]. Use of modern contraceptive methods can substantially reduce maternal mortality and morbidity by preventing unintended pregnancies and ensuring birth spacing [2,3]. However, only 21% of married women in the region use modern contraceptives, most commonly oral or injectable hormonal contraceptives [4]. In addition, 25% of married women report wanting to avoid pregnancy but not currently using modern contraceptives [4].

☆ Role of the funding source: The funder had no role in the study design, data collection or analysis of data or in the authors' interpretation of the results but reviewed them and provided comments. The authors had final authority over the manuscript submitted for publication.

* Corresponding author. Tel.: +1-617-520-2937.
*E-mail addresses:* Alison_Comfort@abtassoc.com (A.B. Comfort), slavea_chankova@abtassoc.com (S. Chankova), Randall_Juras@abtassoc.com (R. Juras), nhsi@dexisonline.com (C.N. Hsi), Lauren_Peterson@abtassoc.com (L.A. Peterson), payal.hathi@gmail.com (P. Hathi).
[1] Present address: Dexis Consulting Group, 1301 Pennsylvania Avenue NW, Washington, DC 20004, United States.
[2] Present address: Research Institute for Compassionate Economics, New Delhi, India.

http://dx.doi.org/10.1016/j.contraception.2015.09.011
0010-7824/

To improve access to contraceptives in rural areas and reduce unmet need, several African countries have shifted some of the provision of injectable and oral contraceptives from health facilities to community health workers (CHWs), i.e. lay health workers who have not received formal professional training [5,6] and whose responsibilities vary by country depending on programmatic needs and the country context. The World Health Organization recommends that health workers confirm that a woman is not pregnant before offering her hormonal contraceptives [7]. This need to verify that pregnancy status presents a barrier to increasing contraceptive use because CHWs lack a reliable method of determining pregnancy status.

This study assesses whether providing CHWs in rural Madagascar with free urine pregnancy tests increases the number of women to whom they sell hormonal contraceptives. The tests can complement or substitute for the simple six-question checklist currently used by health workers in more than a dozen African countries, including Madagascar, to rule out pregnancy. The checklist is an improvement on earlier methods, such as checking menstruation [7–12]. However, the checklist has a false-positive rate ranging between 11% and 61% [13]. As a result, a substantial proportion of women who are not pregnant may be denied contraceptives. In addition, there is evidence that some CHWs do not view the checklist as reliable and continue to rely on the menstruation requirement [14]. Women who are denied contraceptives until their menses begin may become pregnant in the interim [15].

In contrast, pregnancy tests are easy to administer and false-positive results are extremely unlikely [16]. Because uring pregnancy tests are ineffective between fertilization and menses, these tests should be used in combination with the checklist, shown to have a false-negative rate of 22% during this period [17]. The tests have long been unaffordable in low-resource settings, but their cost has fallen significantly in recent years. Nonetheless, these tests are not typically available through health-care providers [16]. To date, only one published study, conducted in Ghana and Zambia, has assessed the effect of introducing free pregnancy tests for use by health workers in family planning (FP) clinics. This study found mixed evidence on whether the availability of pregnancy tests reduced the proportion of nonmenstruating women who were denied contraceptive methods [16]. In our study, we assess the extent to which providing free pregnancy tests to CHWs in rural areas of Madagascar increases the number of clients to whom they provide hormonal contraceptives.

### *1.1. Background — community-based distribution of contraceptives in Madagascar*

The Ministry of Health, Family Planning and Social Protection in Madagascar has task-shifted some of the provision of contraceptives to CHWs as a way to expand access to FP among women in remote, rural areas [7,8]. Approximately 64% of women in Madagascar live 5 km or more from the nearest health center; 40% live 10 km or further [18]. While 32% of married women in rural Madagascar currently use contraceptives, researchers estimate that 18% have an unmet need. Injectable contraceptives are the most popular form of modern FP, used by 20% of married women in rural areas, followed by oral contraceptives (6%) [19]. Madagascar was the first country in sub-Saharan Africa to allow CHWs to administer injectable contraceptives [8,14].

The community-based distribution programs in Madagascar, supported by the United States Agency for International Development (USAID), allow CHWs to sell contraceptives at a small profit to women in rural areas who otherwise have limited access to FP providers. These CHWs are recruited in rural areas at least 5 km from the nearest health center. They live within the communities where they work, and each village typically has one or two CHWs. In addition to conducting other public health promotion activities, they provide FP counseling, pregnancy and method eligibility screening, and they sell short-acting methods (fertility-awareness method using cycle beads, condoms and hormonal contraceptives).

The study was implemented in three regions of Eastern Madagascar — Aloatra Mangoro, Atsinanana and Analanjirofo — among CHWs who had been trained to administer injectables. These CHWs were supported by USAID's Santénet2 project, which was implemented from 2008 to 2013 to scale up training of CHWs, expand public demand for health services and link CHWs to reliable supply chains for health commodities. CHWs visit new and existing FP clients at their homes but can also provide services from their own residence. CHWs maintain individual client records and submit monthly aggregate data to the local health center on the number and type of contraceptive clients.

Until 2006, CHWs in Madagascar were allowed to provide hormonal contraceptives to women only at the time of their menses. The policy was then revised to allow CHWs to use an eligibility checklist, which combines the questions from the pregnancy checklist with other medical eligibility questions related to hormonal contraceptives. In 2008, all CHWs were trained on the eligibility checklist [7]. Despite the training, a survey among an initial cohort of 62 CHWs trained in 2007 found that only 15% said that they could provide injectables to nonmenstruating women [14].

## 2. Methods

### *2.1. Experimental design*

This study uses a randomized-controlled trial design in which CHWs either (i) were given free pregnancy tests to distribute and trained on how to use them (the treatment group) or (ii) did not receive the tests or training on their use (the control group). We estimate the impact of the intervention by comparing outcomes between the treatment and the control groups. The main outcome of interest is the