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CLINICAL ARTICLE

Organization and evaluation of a pilot cervical cancer screening program in Morocco



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ABSTRACT

Objective: To evaluate a pilot program for early detection of cervical cancer using visual inspection with acetic acid (VIA) and the loop electrosurgical excision procedure (LEEP) in one region of Morocco. **Methods:** A descriptive analysis of the screening outcome measures of 43 participating primary care units and one reference center for LEEP was conducted in Meknès-Tafilalet between January 1, 2011, and December 31, 2013. Data on the number of participants, VIA results, colposcopy, and treatment were used in analyses. **Results:** Of the 308 197 women in the target age group (30–49 years), 18 586 (6.0%) were screened by VIA. Positive screening test results were recorded for 1628 (8.8%) women, of whom 1144 (70.3%) received diagnostic confirmation by colposcopy. Of the 87 (7.6%) women with cervical intraepithelial neoplasia, only 16 (18.4%) underwent LEEP; three cases of invasive cervical cancer were diagnosed. **Conclusion:** Issues with implementation of the screening program were found, including low compliance and a low treatment rate of cervical intraepithelial neoplasia by LEEP. By contrast, high rates of colposcopy referral were observed. Screen-and-treat by ablative methods (e.g. thermocoagulation) should be considered to increase treatment rates at national scale-up.

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1. Introduction

Cervical cancer is the second most frequent malignancy detected among all women in Morocco, but the most common among those living in rural areas [1]. In 2012, the estimated numbers of new cervical cancer cases and related deaths in Morocco were 2258 and 1076, respectively [2]. The age-standardized (to the world population) incidence rate for cervical cancer during 2005–2007 reached 15 per 100 000 women in the Casablanca and Rabat regions of the country [3–5]. These two regions are predominantly urban; therefore, the national incidence rate is likely to be higher after inclusion of rural areas. Nonetheless, the Casablanca and Rabat cancer registries do also contain information regarding patients with cancer from rural settings.

Organized cervical cancer screening was not available in Morocco before 2010. When Moroccan women did undergo such screening, it was on an opportunistic basis and involved a cervical smear performed by the private healthcare sector. However, most Moroccan women had never been screened and 70%–80% of all cervical cancer cases were diagnosed at an advanced stage [6,7].

In 2010, a partnership was launched between the Moroccan Ministry of Health, the Lalla Salma Foundation for Cancer Prevention and Treatment, the United Nations Population Fund, and the Screening Group of the International Agency for Research on Cancer. The goal of this partnership was to implement a nationwide program for early detection of cervical cancer using visual inspection with acetic acid (VIA) as the screening tool. The health system in Morocco is decentralized. Consequently, individuals are free to choose healthcare providers from either the public or private sectors, although many prefer private providers to reduce the waiting time and the delays in access to specialty care [8–10]. The screening program aimed to process approximately 300 000 women through public health care in Morocco and to increase capacity in terms of health resources and infrastructure for cervical cancer prevention, diagnosis, and treatment.

The objective of the present study was to evaluate a pilot cervical cancer screening program in the Meknès-Tafilalet region of Morocco during the period 2011–2013.

2. Materials and methods

A descriptive analysis of outcome measures related to screening was conducted between January 1, 2011, and December 31, 2013. The present study was a pilot project performed in the context of a

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population-based screening program before scale-up at the national level. Ethics committee approval and informed consent were not obtained because cervical cancer screening was made available through routine health services without implementing a specific study protocol.

As shown in Fig. 1, the screening program was pyramidal. Cervical cancer screening by VIA was offered to all sexually active women aged 30–49 years who attended their nearest primary care unit (PCU) of the public sector for any reason. Screening was performed by a general practitioner, nurse, or midwife. Women with a positive VIA test result were referred to a secondary health center (or reference center) for confirmatory diagnosis by colposcopy, which was performed by a gynecologist. Women with a negative VIA test result or with no lesions detected by colposcopy were reassured and advised to undergo rescreening after 3 years. Women with cervical intraepithelial neoplasia (CIN) diagnosed at colposcopy underwent the loop electrosurgical excision procedure (LEEP) during the same visit; the surgical sample was sent to the pathology laboratory of Hospital Mohammed V in Meknes for histologic confirmation of the diagnosis. When invasive cervical cancer was suspected at colposcopy, a biopsy sample was taken at the reference center and the woman referred to a tertiary hospital for staging, further investigations, and cancer management. Screening by VIA, confirmation by colposcopy and histopathology, and treatment of CIN or invasive cervical cancer were all covered by the national health insurance system, independent of individual participants' financial resources.

Implementation of the cervical cancer screening program began in two regions of Morocco in 2010, but was scaled up over time to cover seven regions by 2014. In 2012, the program included 328 PCUs, 16 reference centers, and 10 tertiary hospitals (five university hospitals, three

cancer centers, and two cancer centers specialized in obstetrics and gynecology). Furthermore, since implementation, 884 general practitioners and 1216 nurses and midwives working in the PCUs of the seven regions had been trained in the early detection of cervical cancer.

The present study was conducted in Meknès-Tafilalet, a region composed of six provinces and with a good mix of urban and rural populations. Cervical cancer screening was proposed among 122 of the 157 PCUs located in this region. Three reference centers performed colposcopy, biopsies, and LEEP; surgery, radiotherapy and chemotherapy were performed at either the National Oncology Institute in Rabat or the University Hospital in Fes. A sample comprising 43 PCUs (equally distributed into urban and rural areas) and one reference center was randomly selected for analysis in the present study.

A total of 633 PCU health personnel with different levels of expertise (399 nurses and midwives, 220 general practitioners, and 14 gynecologists) were taught to recognize the signs and symptoms of cervical cancer by professors of obstetrics and gynecology from the Faculty of Medicine and Pharmacy of Fes. They were trained in VIA and colposcopy by using the guidelines developed by the Moroccan Ministry of Health and the Lalla Salma Foundation Against Cancer, as well as the colposcopy manual developed by the International Agency for Research on Cancer [11–14].

Intermediate outcomes used to assess the success of the pilot screening program were the compliance rate (the screened population divided by the target population), the positivity rate (the VIA-positive population divided by the screened population), the referral rate (the population that underwent colposcopy divided by the VIA-positive population), and the treatment rate (the population that underwent LEEP divided by the CIN-positive population).

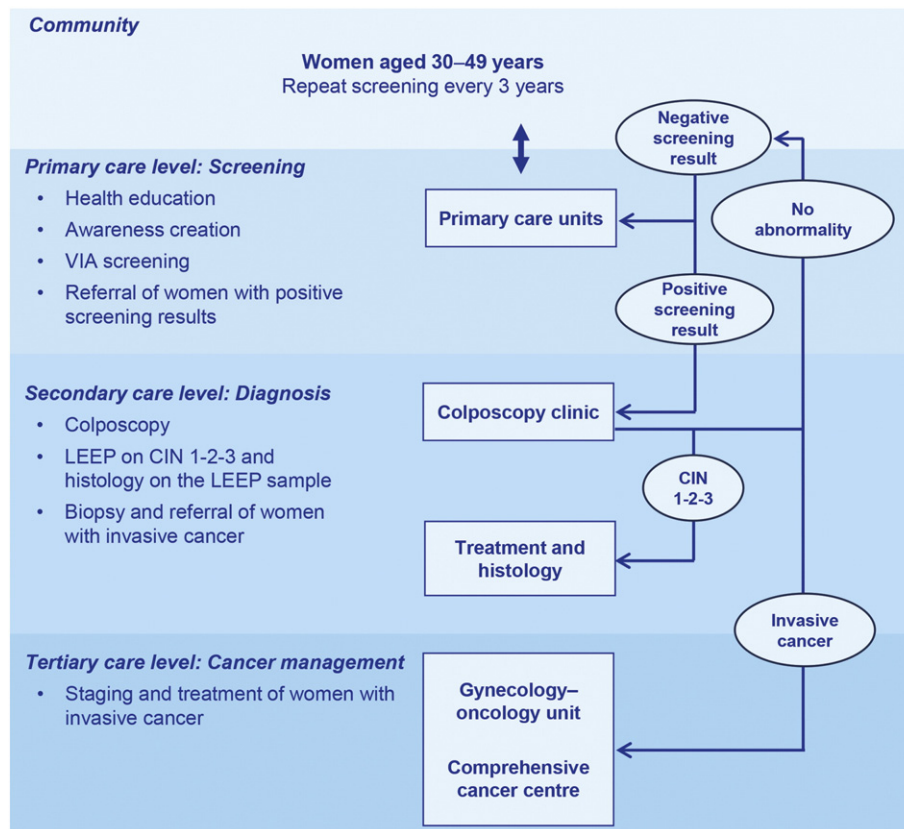


Fig. 1. Organization of the cervical cancer screening program in Morocco. Abbreviations: CIN 1-2-3, cervical intraepithelial neoplasia grades 1, 2 and 3; LEEP, loop electrosurgical excision procedure; VIA, visual inspection with acetic acid.

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