



EDITORIAL

Preventing cervical cancer in low-resource settings: Building a case for the possible

Historical progress in the reduction of morbidity and mortality from cervical cancer has been attributed to systematic screening programs in wealthy countries—an option that has long seemed out of reach for poorer countries. Recent developments suggest, however, that there is new hope for bringing cervical cancer under control, even in countries with limited financial and infrastructural resources.

References to cervical cancer appear as early as the fifth century BC, in Greek and Hindu texts, but more complete descriptions of the disease and its treatment first appear in various medical texts in the 19th century [1]. In 1900, Cullen introduced the concept that precursor lesions were harbingers of cancer of the cervix [2]. Over the course of the next 60 years, further investigation led to a description of the natural history of the disease and to our current understanding of its infectious nature and its slow growth, both of which supported the evolution of prevention strategies. Cytologic methods of screening for cervical cancer and its precursors have become the mainstay of population-based prevention programs, resulting in substantial reduction of disease in countries such as Canada and Finland, where mass screening is systematic, rather than opportunistic [3,4].

In today's world, cervical cancer is primarily a disease found in low-income countries. Of the nearly 500,000 new cases that occur annually, 83% are in the developing world, as are 85% of the 274,000 deaths associated with cervical cancer [5]. This disease burden is primarily the result of weak national health care infrastructures that cannot establish or sustain well-organized screening programs using the comprehensive, multi-visit,

regularly repeated, cytology-based protocol used successfully by many well-resourced countries. Key program factors needed for a population-based decrease in disease, including maximization of program coverage and targeted screening for appropriate at-risk age groups, add to the difficulty of implementing effective screening and treatment programs in environments where populations and economies are unstable and diverse. There is, in fact, scant evidence that a cytology-based screening program in a low-resource country has successfully reduced cervical cancer mortality.

Because of the technical and programmatic challenges inherent in instituting a standard cytology-based screening program, national and international efforts to identify cost-effective alternatives have been ongoing for more than 15 years. However, conclusions from various small studies or pilot projects have, until recently, been difficult to consolidate into an evidence base that supports conclusions with adequate strength to influence policy and practice on a national scale.

Clearly, secondary prevention of cervical cancer should be complemented by a longer-term strategy to develop and implement primary prevention through use of an HPV vaccine. Even with a vaccine on the 5-year horizon, modeling shows that both primary and secondary prevention will be necessary indefinitely in order to make a significant impact on disease burden globally [6–8].

In 1999, generous 5-year funding from the Bill and Melinda Gates Foundation supported the combination of the experience and capabilities of five international agencies—EngenderHealth, the International Agency for Research on Cancer

(IARC), JHPIEGO, the Pan American Health Organization (PAHO), and Program for Appropriate Technology in Health (PATH)—in the coordinated effort of the Alliance for Cervical Cancer Prevention (ACCP).

First and foremost, members of the ACCP recognized that noncytologic methods of screening for cervical cancer and its precursor lesions were the most likely large-scale solution to the problem of high cervical cancer mortality rates in low-resource settings. They were charged by the Gates Foundation to answer important questions about screening and treatment approaches, the related service-delivery needs of low-resource settings, and ways to involve women and their communities in the design and implementation of acceptable, high-quality cervical cancer prevention programs. The ACCP partners believed that targeting as-yet-unanswered questions about the performance, safety, and effectiveness of promising screening and treatment technologies, ways to enhance service-delivery efficiency and effectiveness, and strategies for community outreach and adding their findings to existing and evolving experience and data would bring solutions into clearer focus. At the same time, communicating what was already known in understandable and persuasive terms would heighten awareness of the pressing problem of cervical cancer and of the feasibility of control.

Ultimately, the ACCP planned to combine an adequate evidence base with heightened awareness and commitment among communities and policymakers to bring about a paradigm shift in global thinking—to move from the previously accepted wisdom that cervical cancer was not a high priority and that no feasible solutions were available to poor countries to a new understanding that prevention was not only possible but imperative.

The overriding goal of the ACCP over the past 5 years has been to improve women's health and save women's lives through cervical cancer prevention programs in developing countries. The four main objectives of the ACCP have been to:

1. Assess (qualitatively and quantitatively) the safety and effectiveness of selected screening and treatment technologies and protocols in low-resource settings.
2. Develop appropriate service-delivery algorithms and guidelines for using these technologies and protocols in various settings, ensuring consideration of training needs, follow-up systems, quality of services, and the needs of women with invasive cancer.

3. Ensure that client/provider perspectives and needs are incorporated into the design and evaluation of program strategies—in particular, development of information, education, and communication approaches within and outside the clinical context.
4. Heighten the awareness of cervical cancer and rational prevention strategies among policymakers, providers, and communities to ensure adequate funding for, support of, and use of newly available services.

The ACCP members have summarized their experiences in pursuing the above objectives in seven articles presented in this special supplement of *International Journal of Gynecology and Obstetrics*. The first two articles present the results of ACCP research on innovative approaches to screening and treatment in the developing world. The next three articles highlight ACCP experiences with and perspectives on broader programmatic issues related to organization of service delivery, clinical training, and community involvement. The sixth article emphasizes the critical role of broad-based advocacy efforts at the international, regional, national, and local levels for gaining prevention program policy support. The final paper considers the implications of ACCP work for future policy and program development.

These articles cannot fully reflect the comprehensive body of work accomplished by the ACCP. More than 50 publications have been produced elsewhere that assess cervical cancer needs, programs, and efforts in developing countries, such as underserved populations in Ghana, South Africa, and Peru; the safety and acceptability of low-cost treatment with cryotherapy in Thailand; strategies for cervical cancer prevention in Bolivia and Kenya; and large-scale comparative trials in India. Some of the articles have investigated decision-modeling constructs for cervical cancer detection and prevention, analyzed the cost-effectiveness of visual and human papillomavirus (HPV) screening and an HPV vaccine, and reviewed the broader public health impact of cervical cancer in the developing world. All of these articles are listed, and some are available for download, at our website (www.alliance-cxca.org).

The ACCP has developed numerous education and training tools, which can also be found on our website. These include fact sheets in English, French, and Spanish on topics ranging from the natural history of cervical cancer to HPV testing, visual screening methods, and meeting women's needs. Additionally, numerous presentations, plan-

ning guides, training materials, and technical reports have been prepared to assist in training providers, educating clients, and developing screening programs.

The ACCP has also provided funding for 42 projects in 31 countries through its Small Grants Program. Projects have included:

- Extending coverage of cervical screening among rural women of Albania.
- Analyzing current practices of health professionals and beliefs of the public concerning cervical cancer prevention in Argentina.
- Conducting a needs assessment of cervical cancer prevention in Kazakhstan.
- Launching a pilot project that initiated a cervical cancer screening program using visual inspection with acetic acid for screening and cryotherapy for precancerous lesions in Sudan.
- Studying the incidence of invasive cervical cancer among women in El Salvador.
- Establishing a cervical cancer prevention and control unit in Nicaragua in which health promoters made house visits and distributed brochures.

Information about other grants awarded is available on the ACCP website.

The ACCP has attempted to address a broad array of issues specific to the needs and challenges of low-resource countries. Although significant advances have been made and recognized over the course of the last 5 years, unanswered questions remain. We recognize that the topic is broad and spans public health, as well as social, cultural, economic, and political issues. The articles in this supplement cannot cover all of these aspects, but the ACCP work presented here, in conjunction with the work of others in the field, strengthens the body of

evidence that will enable low-resource countries to develop effective and efficient cervical cancer prevention efforts and make the possible a reality.

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