Viewpoint

A Call for Low- and Middle-Income Countries to Commit to the Elimination of Cervical Cancer✩

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**A B S T R A C T**

The World Health Organization has called for the global elimination of cervical cancer. While high income countries have made significant progress, the incidence and mortality due to cervical cancer is unacceptably high in low and middle income countries (LMIC). Jamaica is an upper middle income country with cervical cancer incidence and mortality of 21.6/100,000 and 13.6/100,000 person years respectively compared to 14.9/100,000 and 7.6/100,000 person years in Latin America and the Caribbean. Jamaica’s pathway to reducing the burden of cervical cancer highlights challenges and opportunities for other LMIC. High prevalence of HPV infection (54% women attending primary care clinics), low levels of cervical cancer screening (<50% women 15 to 54 years old screened in the last 3 years) and suboptimal uptake of HPV vaccination (approximately 30%) are persistent barriers to achieving this goal. Lessons learned from the response to the human immunodeficiency virus (HIV) epidemic confirm the need for serious political commitment by global and national leaders, meaningful engagement of stakeholders and innovative strategies to improve uptake of HPV vaccination and cervical cancer screening. Commitment of technical and financial resources are critical for establishing robust cancer registries and strengthening monitoring and evaluation systems in LMIC.

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Cervical cancer is preventable by vaccination and by screening with technologies that are widely available. Several countries have achieved significant reduction in cervical cancer incidence over the last 3 decades(1). The World Health Organization (WHO) has set a goal for the global elimination of cervical cancer defined as an incidence of fewer than 4 per 100,000 women per year. A 90-70-90 target has been set: 90% of girls fully vaccinated with Human Papilloma Virus (HPV) vaccine by age 15, 70% of women screened with a high-performance test by 35 and again by 45 years of age, 90% of women with cervical disease receive treatment [2]. In 2020, cervical cancer was the fourth leading cause of cancer deaths among women accounting for 6.5% of new cancer cases and 7.7% of cancer deaths [1]. The impact of HPV vaccination and cervical cancer screening is evident in high income countries (HIC) where 88% countries have introduced HPV vaccination programmes, >30% of adolescents have received HPV vaccination and >60% of women have ever been screened for cervical cancer [1,3]. Consequently, cervical cancer is no longer among the top 20 causes of death in some regions of the world including North America and Australia/New Zealand which have age standardized incidence rates of 6.2 and 5.6 per 100,000 person-years respectively [1].

The progress of low- and middle-income countries (LMIC) towards reducing the burden of cervical cancer is unacceptably slow. This is due to the slow roll out of HPV vaccination, low levels of screening and early detection of cervical cancer as well as limited access to comprehensive cancer treatment. In contrast to HIC, less than 30% LMIC have introduced HPV vaccination, less than 3% adolescents are vaccinated against HPV and approximately 44% of women have ever been screened for cervical cancer [3,4].

In Jamaica, an upper middle income country, cervical cancer is the fifth leading cause of cancer deaths and the second most common gynaecological cancer [5]. High prevalence of HPV infection is confirmed by a survey of women attending public sector clin-
ics. HPV infection was detected in 54% of women including 35% women with oncogenic types [6]. A cancer registry confined to the capital city and adjoining parish indicates that age-standardized cervical cancer incidence has declined by 40% between 1993 and 2011 but remains unacceptably high [7,8]. In fact, the age-standardized incidence and mortality rates due to cervical cancer in Jamaica are among the highest in Latin America and the Caribbean or LAC (21.6/100,000 and 13.6/100,000 person years respectively compared to 14.9/100,000 and 7.6/100,000 person years in LAC) [9].

The reasons are clear. The passive approach to screening coupled with the reluctance of women to do pap smears have resulted in low uptake of cervical cancer screening. Cervical cancer screening in Jamaica is largely opportunistic except for routine screening offered at postnatal visits. Pap smear is the primary mode of cervical cancer screening and is offered based on the discretion of the health care provider. Population-based surveys show no significant change in cervical cancer screening over 2 decades. In 1993, 40% women never had a pap smear compared to 36% in 2000 [10,11]. The 2016 Jamaica Health and Lifestyle Survey reported that <50% women 15 to 54 years old had a pap smear within the last 3 years [12]. Barriers to cervical cancer screening include misconceptions about cervical cancer risk (e.g. useful only for sexually active women and younger persons), fear of the procedure, lack of awareness about facilities for screening and long turn-around times for receiving test results [13,14]. Although these factors are persistent and pervasive, they are not adequately addressed by cervical cancer prevention efforts.

A national HPV vaccination programme was launched in 2018 using a school-based approach and adolescent girls at grade 7 school level (ages 11 to 12 years) were targeted. However, the programme was met with resistance due to poor planning, inadequate communication, and public distrust of the HPV vaccine. Misconceptions about HPV vaccination were fueled by social media including fears of infertility, indirect coercion into early sexual activity and concerns about side effects such as syncope. Inadequate sensitization prior to roll-out of the HPV vaccine resulted in lack of engagement and buy-in of key stakeholders including school administrators, religious leaders and community leaders. Approximately 30% of adolescent girls in Jamaica are vaccinated but a lack of standardized data collection tools threatens the validity of estimated HPV vaccination coverage.

Despite these setbacks, elimination of cervical cancer is a realistic and important goal for Jamaica and other LMIC. Approaches to improving HPV vaccination and cervical cancer screening in resource settings are well documented. Extensive educational efforts in communities, public messaging and mobilization of key stakeholders improves HPV vaccination coverage [14]. Mass media campaigns with “cue to action” targeting women and health care providers, smaller culturally sensitive group education, personal invitation letter approaches and automated reminders increase cervical cancer screening coverage in some LMIC [15,16]. A 2019 Meta-analysis showed that HPV self-testing increases uptake of cervical cancer screening but population impact studies in LMIC are limited [17]. However, the recent Scale-Up project in Central America recorded high levels of linkage to treatment after HPV self-testing [18]. Many of these approaches are feasible in other low resource settings and are worth replicating. These approaches emphasize the importance of developing innovative culturally sensitive interventions which must be evaluated, documented and disseminated.

Jamaica’s path to elimination of cervical cancer has begun with the development of National Screening Guidelines for non-communicable diseases which includes cervical cancer screening. These guidelines lay the foundation for transitioning from opportunistic to routine cervical cancer screening of women based on risk stratification. HPV testing will be used as the primary modal-

ty of cervical cancer screening with Pap smear as an alternative. A Plan of Action for Elimination of Cervical Cancer will outline the path to reducing the burden of cervical cancer in Jamaica.

However, historically, many plans are developed but few are operationalized, particularly in LMIC. Successes and failures in the response to the human immunodeficiency virus (HIV) provide important lessons for reaching the goal of elimination. Approximately four decades after HIV was first identified, annual HIV incidence declined by 47% and mother to child transmission of HIV is virtually eliminated in many LMIC [19]. Global success in halting and reversing the spread of HIV (Millennium Development Goal 6) demonstrates the need for political commitment (internationally, regionally and locally), identifying champions, meaningful engagement of civil society and key stakeholders such as women’s groups, and establishing strong monitoring and evaluation systems.

Adequate oversight of implementation of Plans of Action and focusing on a core set of interventions with commitment of resources are critical. Investing in diagnostic and treatment services, such as provision of radiotherapy and appropriate imaging studies, will undoubtedly improve cancer care. However, the limited financial resources of LMIC should target HPV vaccination and cervical cancer screening with treatment of precancerous lesions. Implementation of evidence-based programmes and innovative approaches must become the ideology of stakeholders and not just idle use of jargon.

Establishing robust national cancer registries is not an easy feat and few LMIC (<10%) have high quality population-based cancer registries [20]. However, cancer registries are urgently needed to capture impact indicators such as cervical cancer incidence, mortality and 5-year survival of women with invasive cervical cancer. Indicators pertaining to the 90–70–90 targets should also be clearly defined and feasible to collect in low resource settings which often do not have electronic medical systems. Many LMIC will need technical assistance and financial support to implement these key actions for elimination of cervical cancer. The goal is set and the path to elimination is clear. LMIC must show the commitment to achieve the goal of eliminating cervical cancer.

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Declaration of Interests

None

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