

UCLA

UCLA Previously Published Works

Title

Cervical cancer prevention in Africa: A policy analysis

Permalink

<https://escholarship.org/uc/item/6vj940fn>

Authors

Akanda, Rifa
Kawale, Paul
Moucheraud, Corrina

Publication Date

2022-06-01

DOI

10.1016/j.jcpo.2021.100321

Peer reviewed



HHS Public Access

Author manuscript

J Cancer Policy. Author manuscript; available in PMC 2023 April 12.

Published in final edited form as:

J Cancer Policy. 2022 June ; 32: 100321. doi:10.1016/j.jcpo.2021.100321.

Cervical cancer prevention in Africa: A policy analysis

Rifa Akanda^a, Paul Kawale^b, Corrina Moucheraud^{a,c,*}

^aDepartment of Health Policy and Management, Fielding School of Public Health, University of California, Los Angeles, 650 Charles E Young Dr S, Los Angeles, CA 90095, United States

^bAfrican Institute for Development Policy, P.O Box 31024, Lilongwe, Malawi

^cUCLA Center for Health Policy Research, University of California, Los Angeles, 10960 Wilshire Blvd, Los Angeles, CA 90024, United States

Abstract

Background: Cervical cancer is a major public health challenge in Africa. We analyzed the presence and content of policies for the primary, secondary and tertiary prevention of cervical cancer in Africa, to identify areas of opportunity for policy strengthening in the region most affected by cervical cancer globally.

Methods: We searched for publicly-available policy documents among countries in Africa. Using a data extraction form, we gathered data from these policies about key elements of primary, secondary and tertiary prevention approaches and activities based on World Health Organization (WHO) guidelines. We also contacted key stakeholders in each country to confirm these details. We summarized each country's policy details (summed score for each prevention stage and overall), and compared these scores across individual countries and groups of countries based on economic, policy and public health characteristics.

Results: Most countries had at least one policy addressing some aspect of cervical cancer prevention. Primary and secondary prevention were more commonly addressed, and certain details like age of vaccination, screening age/ interval and method, were frequently mentioned in these policies.

Conclusion: Countries with high HIV burden and relatively more donor financing for health had more comprehensive cervical cancer policies; there was no apparent association with cervical cancer mortality, female representation in government, or economic indicators (poverty prevalence or income inequality).

Policy summary: There is room to improve cervical cancer policy comprehensiveness in Africa, and to bring these policies in line with evidence and expert recommendations. This analysis is timely given upcoming monitoring of the WHO Global Strategy to Accelerate the Elimination of Cervical Cancer as a Public Health Problem. These findings suggest some improvements in

This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

*Corresponding author at: Department of Health Policy and Management, Fielding School of Public Health, University of California, Los Angeles, 650 Charles E Young Dr S, Los Angeles, CA 90095, United States. cmoucheraud@ucla.edu (C. Moucheraud).

Declaration of Competing Interest

The authors report no declarations of interest.

African cervical cancer policy, including increased inclusion of vaccination, but many topics remain under-specified. The influence of internal and external factors on policymaking should also be considered.

Keywords

Cervical cancer; Prevention; Africa; Policy; HPV vaccine

1. Introduction

Cervical cancer remains a major public health challenge in Africa, where it is the leading cause of cancer death for women [1,2] and incidence is rising [3]. High-income countries have reduced their cervical cancer burden through implementation of effective prevention strategies. Primary prevention (vaccination against human papillomavirus [HPV]) and secondary prevention (screening and treatment of precancerous lesions) have the potential to eliminate cervical cancer worldwide [4,5]. Although lower-income countries have faced numerous resource constraints and implementation challenges when introducing and scaling up these strategies [6–8], there is increasing interest and commitment by African policymakers to address the substantial burden of cervical cancer. The Organization of African First Ladies for Development have undertaken initiatives related to cervical cancer control, the African Cancer Coalition has established a network of oncologists across the continent, and the African Union has held advocacy events on cancer alongside their annual summit. It is thus an opportune moment to ensure that this focus and advocacy can be operationalized through cancer control policies that are robust and evidence-based [9]. Policy can affect financing, service organization and delivery, discourse and behaviors [10–12]; and detailed, multi-level policies and strategies are needed in order to effectively implement programs and services to reduce cervical cancer burden [13]. Per the Centers for Disease Control and Prevention (CDC)'s logic model for developing national cancer control programs, policy change can affect access to care, delivery of clinical preventive services and cancer care, as well as individuals' knowledge and behaviors – ultimately impacting quality of life, disparities, and cancer outcomes [14].

Not all plans and policies are equally actionable and relevant, however. For example, although most African countries have at least one integrated non-communicable disease (NCD) policy or plan [15], a recent analysis identified substantial heterogeneity in the level of detail and comprehensiveness of such plans, and a mismatch between priorities and activities enumerated in national versus global documents [16]. This may impact capacity to implement such policies and deliver services accordingly. It is therefore imperative to analyze both the presence and content of health policies in order to understand how they might influence outcomes.

We undertook a review to characterize the cervical cancer policy landscape in Africa. To our knowledge, only two analyses have been previously conducted on this topic, one focused exclusively on eastern Africa [17], and another that was conducted in 2016 so may be outdated in the rapidly-evolving context of cancer control [18] and given the major shifts in the global policy space around NCDs and cancer control including the

World Health Organization (WHO) Global Action Plan for the Prevention and Control of NCDs 2013–2020 [19], WHO's recent Global Strategy to Accelerate the Elimination of Cervical Cancer as a Public Health Problem [20], as well as commitments from agencies including Gavi, PEPFAR and UNAIDS to invest in cervical cancer prevention and control activities. We aimed to summarize the publicly-available information relevant to cervical cancer prevention (primary, secondary and/or tertiary) policy among African countries, and to assess whether policies varied by country-level characteristics such as health policy and financing environments, burden of disease, or economic situation.

2. Methods

2.1. Search strategy and data collection

We conducted a scoping review to collect national cervical cancer policy documents from countries in the World Health Organization African region. First, we gathered policies posted to the International Cancer Control Partnership (ICCP) database [21] (International Cancer Control Partnership, 2020). Next, we searched Google to locate additional cervical cancer policy documents using search terms: cervical cancer, HPV, policy, and Ministry of Health (translated for non-English speaking countries). Third, we identified relevant policy documents from the website of each country's Ministry of Health or equivalent, using both a manual search and search terms if a search engine was available; each website was searched for overall health policies and plans, as well as those specific to cervical cancer, HPV, cancer, non-communicable diseases (NCDs), sexual/reproductive health, and adolescent/child health.

We included policies in the analysis if they included information on primary, secondary, or tertiary prevention for cervical cancer. Primary prevention activities work to reduce risk factors; through secondary prevention, precancerous cases are identified and managed; and tertiary activities focus on mitigating disability among those with cancer.

There were no restrictions based on publication year and we analyzed the most recent version of each policy identified. There were no language restrictions, and non-English language documents were translated for analysis. If no policy/plan documents were found, we included information as available from the WHO, including the Global Immunization Summary, the Cancer Atlas, and HPV and Related Disease reports.

We also collected contact information for stakeholders in each country who might have information about cervical cancer policy – such as Ministry of Health employees, representatives of multilateral institutions (the West African Health Organization, the WHO), and collaborators listed on policy documents. We emailed these individuals to confirm our data about their country's primary, secondary, and tertiary cervical cancer prevention activities; unfortunately, only three countries responded to our queries so we were unable to use these data in the analysis.

Using global databases, we collected data about each country's region within Africa [22], burden of disease (female life expectancy [2018] [23], HIV prevalence [2019] [24] and cervical cancer age-adjusted mortality rate [2018] [2]), economics (prevalence of poverty

[most recent year available, ranged 2006–2018] [23] and Gini index [most recent year available, ranged 2008–2017] [23]), health financing (external financing for health [2017] [25]), and policy environment (presence of a non-communicable disease policy [2019] [25], and female representation in government [2014] [26]).

2.2. Data extraction and analysis

Each policy document was reviewed for information related to clinical requirements for cervical cancer primary, secondary or tertiary prevention. These were specified following recommended programmatic guidelines per the WHO [27,28]. One point was assigned per activity mentioned in the policy, and these points (equally weighted) were summed into scores for each category of prevention as well as overall (Table 1). Some data elements extracted (i.e., target sex for vaccination program, vaccine price, health personnel authorization for lesion treatment and for cancer treatment, follow-up protocol following cancer treatment) were not included in analysis because very few policies/plans included these. Policies were classified as recent if they were dated 2018 or later.

We analyzed scores across countries and activities; and we compared the median policy score across country characteristic (region, burden of disease, economics, health financing, and policy environment). For continuous measures such as cervical cancer burden or Gini coefficient, we classified each country as being above- or below-average for each indicator. The only exception was female representation in government, where the distribution was highly skewed, so we used a more stringent benchmark (85th percentile).

3. Results

In total, 47 of the 54 African countries contributed data to this analysis: 35 had policies containing information on primary prevention, 38 on secondary prevention, and 19 on tertiary prevention. There were 39 countries with recent (2018 or later) policies: 30 policies including primary prevention, 26 including secondary prevention, and 7 including tertiary prevention.

The median overall cervical cancer policy score was 4 (average: 4.8, range: 0–11) (Fig. 1). Three countries received an overall score of zero (Equatorial Guinea, Guinea Bissau, and South Sudan) indicating that they did not have any recent policies including primary, secondary or tertiary cervical cancer prevention. South Africa received the highest score (11) and Kenya and Malawi received scores of 10. Table 2 shows information about the policies and points per country.

Overall, cervical cancer policies were more comprehensive in countries in Eastern and Southern Africa than other regions (Table 3). The financing and policy environment appear to be associated with the comprehensiveness of cervical cancer policies: countries with higher external financing for health had slightly more comprehensive cervical cancer policies (median score = 5) than countries with less external health financing (median score = 4). In countries with greater female representation in government, cervical cancer policies were substantially less comprehensive (median score = 4) than in countries with lesser female representation in government (median score = 8).

3.1. Primary prevention

Policies were assigned up to 4 points for their discussion of primary prevention activities. Among those countries with a primary prevention policy (n = 35), the average score was 1.7 (median 2). Focusing on recent policies only (n = 30), the average score was 2.0 (median 2).

Policies were most likely to contain information about the age range of girls eligible for HPV vaccination (n = 32) although this ranged widely (Table 4). (The WHO recommends 2 vaccine doses for girls aged 9–14 [20]) Some countries mentioned a specific age cohort to be vaccinated (most commonly, 9-year old girls) while many others gave ranges for vaccine eligibility. Two countries (Malawi and South Africa) had policies that mentioned including boys in the future. Fewer than half of countries had policies containing information about which vaccine was being used or the vaccination schedule (n = 20), the setting(s) where vaccination would be offered (n = 12) or sensitization/education campaigns (n = 14). The most common vaccination setting was schools (n = 12), and 6 countries also included approaches for reaching out-of-school girls.

3.2. Secondary prevention

Most countries had policies that discussed secondary screening approaches (n = 38). Among countries with any secondary prevention policy, the average and median score was 3 (maximum possible score: 6). Countries with recent policies (n = 30) also had an average and median score of 3.

Among policy elements, the most commonly included detail was about screening method (n = 35) and this was most commonly visual inspection with acetic acid (VIA); only Algeria and the Seychelles did not mention VIA. Policies that mentioned multiple screening approaches often suggested segmentation based on resource availability or level of the health system. Target ages for routine screening were also commonly mentioned but both starting and stopping ages for screening varied considerably across countries – as did suggested routine screening schedules, and there was no apparent association between screening approach/technology and recommended screening frequency. Only four countries had different screening age recommendation or frequencies for HIV-positive versus -negative women in their policies. The most common lesion treatment technique mentioned in these policies was cryotherapy; and the three countries with protocols for women after lesion treatment all had different recommendations. Only nine countries' policies discussed awareness-raising about cervical cancer screening. The WHO recommends screening women aged 30–49 with HPV DNA test (or VIA in resource-constrained settings) followed by treatment of precancerous lesions [20].

3.3. Tertiary prevention

Twenty-eight countries did not have any information on tertiary prevention (Table 4); among those countries with a tertiary prevention policy (n = 19) the average score was 1.6 and the median was 2 (the maximum possible score was 2). Recent policies (n = 7) were slightly less comprehensive with an average of 1.3 and a median of 1.

Cancer treatment, particularly chemotherapy and surgery, was discussed by 18 countries' policies. Only the Gambia and Kenya recommended specific treatment methods for each cancer stage. Pain relief was more commonly mentioned as a palliative care approach by 9 countries, and 4 included other types of psychosocial support.

4. Discussion

Cervical cancer burden remains high in Africa, with an age-standardized incidence rate of 30.9, versus 13.3 globally (and 8.4 in high-income countries) [29]. Despite the potential to save many women's lives, most countries in the African region lack comprehensive cervical cancer control policies. Robust policies are an important – although not sufficient – step in ensuring the delivery of life-saving cancer prevention services.

We collected, summarized and compared the content of recent policies discussing primary, secondary or tertiary cervical cancer prevention in Africa. Nearly all countries had at least one policy addressing cervical cancer prevention, but most lacked important details. The median number of policy components in a country was 4 (out of a maximum of 12). Recent policies were also not more detailed than older policies, suggesting little improvement in policy comprehensiveness over time.

Policies were more likely to address primary and secondary prevention than tertiary. A previous scoping review had found lesser emphasis on HPV vaccination among African cervical cancer policies [18] – so our results suggest an improvement in policies for primary prevention, which may reflect increased vaccine availability in the region. The relative emphasis on prevention versus treatment has been noted in other recent policy reviews from Africa [16] – and should be understood in the context of limited surgical access [30,31] and lack of palliative care [32] in the region, alongside strong financial support from Gavi for HPV vaccination in many African countries. It is, however, particularly important for cervical cancer policies to address tertiary prevention – especially in lower-income countries where many women with cervical cancer receive late-stage diagnoses due to lack of access to primary and secondary prevention programs, and where cervical cancer survival is lowest [33].

Policies from countries in Eastern and Southern Africa, especially those with above-average HIV prevalence (e.g., Kenya, Malawi, and South Africa), were more comprehensive than policies from other regions. As these diseases share many important risk factors and women who are HIV-positive have more aggressive cancer progression, this is a crucial synergy, and prevention activities are particularly important in high HIV burden contexts – which may be one reason for stronger cervical cancer policies among countries in this group.

Policy content may be influenced by donor priorities, as countries with more health financing from external sources have more comprehensive policies. Many cervical cancer prevention activities in low- and middle-income countries are donor-funded (e.g., HPV vaccine financed and supported through Gavi and generous support for screening activities through USAID and other partners) [34]. This may be picking up an “HIV effect,” as HIV is the most common focus area for donor financing in Africa [35] – so the comprehensive

cervical cancer policies in high HIV burden countries, particularly those with more donor financing, may reflect responsiveness to both public health necessity and donor attentiveness to HIV response. We encourage further work to better understand the relationship between health financing (both source, like donor funding, and quantity) and policy quality.

We were surprised to see no association between a country's cervical cancer burden and its policy comprehensiveness (Malawi is a noteworthy exception as it has the second-highest cervical cancer mortality rate in the region [1] as well as the second-most comprehensive policy) – although mortality estimates are subject to substantial error due to poor detection and reporting, so this correlation should be interpreted with caution. It is however possible that countries with high cervical cancer mortality are also those with weaker health systems and generally limited resources to implement robust cancer control strategies, but we did not explore this hypothesis.

We also expected to see a relationship between female representation in government and policy comprehensiveness, as more gender-inclusive voices at the policymaking table might be associated with greater attention to women's health issues. However, we found evidence to suggest the opposite is true. Previous analyses from both higher- and lower-income countries have found a positive association between female representation in government and population health outcomes, and the posited mechanism is through increased financing for health [36–40]. Because cervical cancer programs in Africa are largely externally funded, this may attenuate the possible positive health effects of female governance on cervical cancer policy. A different hypothesis is that, due to the technical expertise needed for policy formulation, the stakeholders involved in cervical cancer policy development are at a different “level” – for example, within cancer units at the Ministries of Health – rather than the ministerial-level represented in this indicator. We encourage further exploration of this, and particular consideration of how women's voices – from civil society as well as cervical cancer survivors – can be amplified in the policy-making space.

Certain policy components were more likely to appear than others, across types and countries. For example, it was more common to specify target vaccination and screening groups (91 % of countries with primary prevention policies, and 76 % of countries with secondary prevention policies, respectively) – and relatively less common to discuss sensitization campaigns (40 % and 21 % of countries' primary and secondary prevention policies, respectively) or education about risk factors (20 % of primary prevention policies). However, policy details were very heterogeneous and are not always reflective of current evidence. For example, the WHO strategy for cervical cancer elimination recommends twice-lifetime screening (ages 35 and 45) [41], reflecting findings from extensive modeling analyses [42–44]. However, these policies varied widely in their recommendations around ages for cervical cancer screening, from beginning at age 20–35 (most common recommendation was age 25) and stopping at age 45–70 (most common recommendation was age 50).

Similarly, countries varied in their recommended screening intervals, from annual to once per decade, although the most common recommended frequencies were every two or three years. By deviating from global recommendations for optimal screening schedules,

these policies may subject women to over-screening [45], which can waste valuable limited financial and human resources, and can cause unnecessary burden for women (e.g., treatment complications, emotional distress) [46,47]. Additionally, although policies about cervical cancer screening in Africa mostly incorporate visual inspection with acetic acid (VIA) as is recommended by the WHO for lower-resource settings, only four reflected recent lesion treatment guidelines [48], i.e. including thermocoagulation as an alternative approach in low-resource contexts. Such mismatches were identified in an earlier analysis of cervical cancer policy in Africa [18], suggesting little improvement over time. These gaps and discrepancies highlight opportunities for strengthening and aligning local policies with global recommendations.

Several recommendations for policymaking arise from this analysis. (1) Countries should critically examine their cervical cancer control policies, with an eye toward comprehensive inclusion of primary, secondary and tertiary prevention activities. (2) During the process of choosing specific policy elements – for example, age for HPV vaccination, recommended frequency of screening or use of thermocoagulation – policymakers should consult the scientific literature to ensure their policies reflect the current evidence-based best practices. (3) There may be a need to examine, and potentially strengthen, who is motivating and who is “at the table” for cancer control policymaking. For instance, we found that external donors may play a substantial role in stimulating cervical cancer policy adoption/change, while female representation in policymaking spaces did not lead to improved cervical cancer policies. This is an area deserving of critical analysis, and in particular, policymakers may wish to identify ways to amplify local expertise during the policy design stage. (4) Although not examined in this analysis, policymakers and researchers should be attentive to the other steps in policy implementation, e.g. resource allocation, clear delineation of roles and responsibilities, cultivating champions, engaging constituency groups, specification and tracking of relevant monitoring indicators. Policies should be seen as living documents that should be updated to reflect new scientific evidence, to engage new and relevant stakeholders, to reflect evolving local contexts, and to address implementation realities. (5) This analysis could serve as a “benchmarking” or monitoring exercise if repeated in the future, e.g. following the 2022 World Health Assembly when countries will report back on their progress toward the WHO elimination strategy. Repeating this analysis could shed light onto policy progress over time.

This study has some limitations that should be noted. First, this was a desk review using Internet-based resources, so we may have overlooked important sources or recent policy documents that may not yet be online. Although we tried to include all relevant policies, for example, by looking at adolescent health policies to see if they included information about the HPV vaccine and reviewing reproductive health policies for relevant information about cervical cancer screening, it is possible that we overlooked other policies with relevant content. This may be a particular shortcoming if specific activities are more likely to be included in policies outside our search terms, for example if palliative care policy is detailed in other documents. We attempted to address this by contacting key stakeholders in each country to confirm and correct our data, but as only three countries responded to our queries, we unfortunately cannot fully address this limitation. In particular, our search did not include HIV policies, universal health coverage policies, or primary health care policies

– all of which could potentially include cervical cancer prevention and control activities. Second, due to the relatively small number of countries we could not conduct multiple variable analyses, so our comparative assessment lacks intersectionality. This explorative approach should be expanded in future research using larger datasets and collecting new qualitative data from policymakers and stakeholders to explore these hypotheses. Third, the presence of a policy is not the ultimate end point: a policy is merely on the pathway to improved outcomes. Further work is needed to understand policy implementation and how these policies affect health outcomes such as cancer incidence and survival, as conducted in the recent analysis by Njunga et al. in Eastern Africa [17].

5. Conclusions

Comprehensive, evidence-based policies are an essential step toward improving population health outcomes – including for cancer control. We found that although many countries in Africa have policies that address primary, secondary and/or tertiary prevention of cervical cancer, many of these policies are not comprehensive. When policies do include details, they vary widely across countries and may not reflect global recommendations and recent evidence. These findings are surprising given the global policy context that increasingly emphasizes NCDs – and specifically cervical cancer elimination; and the major burden of cervical cancer in the African region. These results suggest that certain factors may influence cervical cancer policy comprehensiveness, including HIV burden and donor financing for health; while other variables may not be as influential as hypothesized, such as cervical cancer mortality and female representation in government. This analysis highlights opportunities for strengthening cervical cancer policy in the African region, including specific topics that are often overlooked, mismatches with global evidence that can be addressed, and “background” factors that may influence policy content and should be considered by those involved in knowledge translation efforts.

Acknowledgements

The authors thank Chantelle Boudreaux for her extremely helpful feedback on an earlier draft of this paper.

Funding

This research was supported by the NIH/National Center for Advancing Translational Sciences (grant number KL2TR001882, PI Wong, UCLA Clinical and Translational Science Institute, Institutional Development Core).

References

- [1]. Arbyn M, Weiderpass E, Bruni L, de Sanjosé S, Saraiya M, Ferlay J, Bray F, Estimates of incidence and mortality of cervical cancer in 2018: a worldwide analysis, *Lancet Glob. Health* (2019).
- [2]. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A, Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries, *CA Cancer J. Clin* 68 (6) (2018) 394–424. [PubMed: 30207593]
- [3]. Jedy-Agba E, Joko WY, Liu B, Buziba NG, Borok M, Korir A, Masamba L, Manraj SS, Finesse A, Wabinga H, Trends in cervical cancer incidence in sub-Saharan Africa, *Br. J. Cancer* (2020) 1–7.
- [4]. Hall MT, Simms KT, Lew J-B, Smith MA, Brotherton JM, Saville M, Frazer IH, Canfell K, The projected timeframe until cervical cancer elimination in Australia: a modelling study, *Lancet Public Health* 4 (1) (2019) e19–e27. [PubMed: 30291040]

- [5]. Simms KT, Steinberg J, Caruana M, Smith MA, Lew J-B, Soerjomataram I, Castle PE, Bray F, Canfell K, Impact of scaled up human papillomavirus vaccination and cervical screening and the potential for global elimination of cervical cancer in 181 countries, 2020–99: a modelling study, *Lancet Oncol.* 20 (3) (2019) 394–407. [PubMed: 30795950]
- [6]. Denny L, de Sanjose S, Mutebi M, Anderson BO, Kim J, Jeronimo J, Herrero R, Yeates K, Ginsburg O, Sankaranarayanan R, Interventions to close the divide for women with breast and cervical cancer between low-income and middle-income countries and high-income countries, *Lancet* 389 (10071) (2017) 861–870. [PubMed: 27814963]
- [7]. Denny L, Anorlu R, Cervical cancer in Africa, *Cancer Epidemiol. Prev. Biomark* 21 (9) (2012) 1434–1438.
- [8]. Finocchiaro-Kessler S, Wexler C, Maloba M, Mabachi N, Ndikum-Moffor F, Bukusi E, Cervical cancer prevention and treatment research in Africa: a systematic review from a public health perspective, *BMC Women’s Health* 16 (1) (2016) 29. [PubMed: 27259656]
- [9]. Ginsburg O, Badwe R, Boyle P, Derricks G, Dare A, Evans T, Eniu A, Jimenez J, Kutluk T, Lopes G, Changing global policy to deliver safe, equitable, and affordable care for women’s cancers, *Lancet* 389 (10071) (2017) 871–880. [PubMed: 27814964]
- [10]. Burris S, Wagenaar AC, Swanson J, Ibrahim JK, Wood J, Mello MM, Making the case for laws that improve health: a framework for public health law research, *Milbank Q.* 88 (2) (2010) 169–210. [PubMed: 20579282]
- [11]. Given LS, Black B, Lowry G, Huang P, Kerner JF, Collaborating to conquer cancer: a comprehensive approach to cancer control, *Cancer Causes Control* 16 (1) (2005) 3–14. [PubMed: 16208570]
- [12]. Institute of Medicine, For the Public’s Health: Revitalizing Law and Policy to Meet New Challenges, The National Academies Press, Washington, DC, 2011.
- [13]. Herzog TJ, Huh WK, Einstein MH, How does public policy impact cervical screening and vaccination strategies? *Gynecol. Oncol* 119 (2) (2010) 175–180. [PubMed: 20932433]
- [14]. Centers for Disease Control and Prevention, National Comprehensive Cancer Control Program Logic Model, 2012.
- [15]. World Health Organization, Assessing National Capacity for the Prevention and Control of Noncommunicable Diseases: Report of the 2017 Global Survey, 2018.
- [16]. Boudreaux C, Noble C, Coates MM, Kelley J, Abanda M, Kintu A, McLaughlin A, Marx A, Bukhman G, Noncommunicable Disease (NCD) strategic plans in low-and lower-middle income Sub-Saharan Africa: framing and policy response, *Glob. Health Action* 13 (1) (2020), 1805165.
- [17]. Njuguna DW, Mahrouseh N, Onisoyonivosekume D, Varga O, National policies to prevent and manage cervical cancer in east African countries: a policy mapping analysis, *Cancers* 12 (6) (2020) 1520. [PubMed: 32531977]
- [18]. Dutta T, Meyerson B, Agle J, African cervical cancer prevention and control plans: a scoping review, *J. Cancer Policy* 16 (2018) 73–81.
- [19]. World Health Organization, Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020, Geneva, Switzerland, 2013.
- [20]. World Health Organization, Global Strategy to Accelerate the Elimination of Cervical Cancer as a Public Health Problem, 2020.
- [21]. National Plans [<https://www.iccp-portal.org/map>].
- [22]. African Union, African Union Handbook, 7th ed., African Union Commission, 2020.
- [23]. World Development Indicators [<http://databank.worldbank.org/data/home.aspx>].
- [24]. AIDSInfo.
- [25]. World Health Organization, Global Health Observatory, 2020.
- [26]. United Nations, Gender Statistics, 2018.
- [27]. World Health Organization, WHO Guidance Note: Comprehensive Cervical Cancer Prevention and Control: a Healthier Future for Girls and Women, 2013.
- [28]. World Health Organization, Comprehensive Cervical Cancer Control: a Guide to Essential Practice, 2nd ed., World Health Organization, 2014.
- [29]. World Health Organization, Estimated Age-Standardized Incidence Rates in 2020.

- [30]. Luboga S, Macfarlane SB, von Schreeb J, Kruk ME, Cherian MN, Bergström S, Bossyns PB, Denerville E, Dovlo D, Galukande M, Increasing access to surgical services in sub-saharan Africa: priorities for national and international agencies recommended by the Bellagio Essential Surgery Group, *PLoS Med.* 6 (12) (2009), e1000200. [PubMed: 20027218]
- [31]. Hsia RY, Mbembati NA, Macfarlane S, Kruk ME, Access to emergency and surgical care in sub-Saharan Africa: the infrastructure gap, *Health Policy Plan.* 27 (3) (2012) 234–244. [PubMed: 21441566]
- [32]. van der Plas WY, Benjamens S, Kruijff S, The increased need for palliative cancer care in Sub-Saharan Africa, *Eur. J. Surg. Oncol.* (2020).
- [33]. Sengayi-Muchengeti M, Joko-Fru WY, Miranda-Filho A, Egue M, Akele-Akpo MT, N'da G, Mathewos A, Buziba N, Korir A, Manraj S, Cervical cancer survival in sub-Saharan Africa by age, stage at diagnosis and Human Development Index (HDI): a population-based registry study, *Int. J. Cancer* (2020).
- [34]. Harmon T, White H, in: *TogetHER* (Ed.), Investing in Global Cervical Cancer Prevention: Resources for Low-Income and Lower Middle-Income Countries in 2019, 2020.
- [35]. Micah AE, Su Y, Bachmeier SD, Chapin A, Cogswell IE, Crosby SW, Cunningham B, Harle AC, Maddison ER, Moitra M, Health sector spending and spending on HIV/AIDS, tuberculosis, and malaria, and development assistance for health: progress towards Sustainable Development Goal 3, *Lancet* (2020).
- [36]. Ng E, Muntaner C, The effect of women in government on population health: an ecological analysis among Canadian provinces, 1976–2009, *SSM-Population Health* 6 (2018) 141–148. [PubMed: 30271872]
- [37]. Lynch J, Smith GD, Hillemeier M, Shaw M, Raghunathan T, Kaplan G, Income inequality, the psychosocial environment, and health: comparisons of wealthy nations, *Lancet* 358 (9277) (2001) 194–200. [PubMed: 11476836]
- [38]. Swiss L, Fallon KM, Burgos G, Does critical mass matter? Women's political representation and child health in developing countries, *Soc. Forces* 91 (2) (2012) 531–558.
- [39]. Quamruzzaman A, Lange M, Female political representation and child health: evidence from a multilevel analysis, *Soc. Sci. Med* 171 (2016) 48–57.
- [40]. Homan P, Political gender inequality and infant mortality in the United States, 1990–2012, *Soc. Sci. Med* 182 (2017) 127–135. [PubMed: 28458098]
- [41]. World Health Organization, *Global Strategy towards the Elimination of Cervical Cancer as a Public Health Problem*, 2020.
- [42]. Brisson M, Kim JJ, Canfell K, Drolet M, Gingras G, Burger EA, Martin D, Simms KT, Bénard É, Boily M-C, Impact of HPV vaccination and cervical screening on cervical cancer elimination: a comparative modelling analysis in 78 low-income and lower-middle-income countries, *Lancet* 395 (10224) (2020) 575–590. [PubMed: 32007141]
- [43]. Campos NG, Sharma M, Clark A, Lee K, Geng F, Regan C, Kim J, Resch S, The health and economic impact of scaling cervical cancer prevention in 50 low- and lower-middle-income countries, *Int. J. Gynecol. Obstet* 138 (2017) 47–56.
- [44]. Mezei AK, Armstrong HL, Pedersen HN, Campos NG, Mitchell SM, Sekikubo M, Byamugisha JK, Kim JJ, Bryan S, Ogilvie GS, Cost-effectiveness of cervical cancer screening methods in low-and middle-income countries: a systematic review, *Int. J. Cancer* (2017).
- [45]. Kim JJ, Campos NG, Sy S, Burger EA, Cuzick J, Castle PE, Hunt WC, Waxman A, Wheeler CM, Inefficiencies and high-value improvements in US cervical cancer screening practice: a cost-effectiveness analysis, *Ann. Intern. Med* 163 (8) (2015) 589–597. [PubMed: 26414147]
- [46]. Habbema D, Weinmann S, Arbyn M, Kamineni A, Williams AE, de Koki MCM, van Kemenade F, Field TS, van Rosmalen J, Brown ML, Harms of cervical cancer screening in the United States and the Netherlands, *Int. J. Cancer* 140 (5) (2017) 1215–1222. [PubMed: 27864938]
- [47]. Kim JJ, Burger EA, Regan C, Sy S, Screening for cervical cancer in primary care: a decision analysis for the US Preventive Services Task Force, *JAMA* 320 (7) (2018) 706–714. [PubMed: 30140882]
- [48]. World Health Organization, *WHO Guidelines for the Use of Thermal Ablation for Cervical Pre-Cancer Lesions*, World Health Organization, Geneva, 2019.

- [49]. WHO Vaccine-Preventable Diseases, Monitoring System, 2020 Global Summary [https://apps.who.int/immunization_monitoring/globalsummary].
- [50]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Angola, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [51]. Ministro da Saúde, Plano Nacional de Desenvolvimento Sanitário “Angola 2012 – 2025”, Ministro da Saúde (MOH), 2014.
- [52]. Ministere de la Sante Publique, Health Sector Strategy 2016–2027. Republique du Cameroun (Ed.), n.d.
- [53]. Ministry of Health & Wellness, Botswana Multi-Sectoral Strategy for the Prevention and Control of Non-Communicable Diseases 2018–2023, Ministry of Health & Wellness, Republic of Botswana, 2018.
- [54]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Botswana, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [55]. Ministere De La Sante Publique DAS, E De La Promotion Du Genre Et De L’action Humanitaire, Document De Politique Nationale De Prevention Et De Lutte Contre Les Maladies Non Transmissibles, Republique Centrafricaine: Ministere De La Sante Publique, Des Affaires Sociale, E De La Promotion Du Genre Et De L’action Humanitaire, 2014.
- [56]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Swaziland, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [57]. Kingdom Of Eswatini Ministry of Health, National Cancer Prevention & Control Strategy 2019, 2019.
- [58]. Ministère de la Santé Publique, Plan Multisectoriel De Lutte Et De Contrôle Des Maladies Non Transmissibles 2017–2021, République du Tchad Ministère de la Santé Publique, 2017.
- [59]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Lesotho, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [60]. U.S President’s Emergency Plan for AIDS Relief, Lesotho Country Operational Plan (COP) 2015 Strategic Direction Summary, 2015.
- [61]. Ministre de la Santé et de la Population, Plan National De Developpement Sanitaire 2018–2022, Ministre De La Santé, République Du Congo, 2018.
- [62]. Jemal A, Torre LA, Soerjomataram I, Bray F, The Cancer Atlas, 3rd ed., 2019. Atlanta Georgia.
- [63]. Malawi Ministry of Health and Population, National Service Delivery Guidelines for Cervical Cancer Prevention and Control, 2019.
- [64]. Malawi Ministry of Health and Population, National Cancer Control Strategic Plan 2019–2029. Malawi.
- [65]. Republique Democratique Du Congo Ministere De La Sante Publique, Strategie Nationale De Lutte Contre Les Cancers Du Col Uterin Et Du Sein En Republique Democratique Du Congo, Republique Democratique Du Congo Ministere De La Sante Publique, 2015.
- [66]. Ministério da Saúde, Plano Nacional Controlo de Cancro, 2019–2029. República de Moçambique Ministério da Saúde.
- [67]. Ministério Da Saúde Direcção Nacional De Saúde Pública - Departamento De Doenças Não Transmissíveis, Plano Estratégico Nacional De Prevenção E Controlo Das Doenças Não Transmissíveis Para O Período 2008–2014, Mozambique, 2008.
- [68]. USAID, MCSP Mozambique Program Brief Reproductive Health: Cervical Cancer Prevention and Family Planning, 2018, 4.
- [69]. U.S President’s Emergency Plan for AIDS Relief, Namibia Country Operational Plan 2019 Strategic Direction Summary, 2019.
- [70]. Bruni L, Albero G, Serrano B, Mena M, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Namibia, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.

- [71]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Gabon, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [72]. National Department of Health. Cervical Cancer Prevention and Control Policy, Republic of South Africa National Department of Health, 2017.
- [73]. Department of Health, National Policy Framework and Strategy on Palliative Care 2017–2022, Republic of South Africa, 2017.
- [74]. Gavi, Sao Tome & Principe Joint Appraisal 2019, 2019, 17.
- [75]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Zambia, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [76]. Gavi, Zimbabwe Joint Appraisal 2019, 2019.
- [77]. Ministry of Health and Child Care, Zimbabwe Introduces the Human Papillomavirus (HPV) Vaccine for Girls Aged 10–14 Years, 2018.
- [78]. Ministry of Health and Child Welfare, The National Cancer Prevention and Control Strategy for Zimbabwe 2013–2017, Ministry of Health and Child Welfare, 2013.
- [79]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Algeria, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [80]. Republique du Benin Ministere de la Sante Direction de la Sante de la Mere et de l'enfant, Directives Nationales et Guide pour la Prevention et le Contrôle du Cancer du Col de l'uterus et du Cancer du Sein, REPUBLIQUE DU BENIN, 2017.
- [81]. Ministère de la santé, Plan stratégique intégré de lutte contre les maladies non transmissibles, 2016–2020, Burkina Faso Ministère de la santé, 2016.
- [82]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Burkina Faso, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [83]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Comoros, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [84]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Cape Verde, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [85]. The State of Eritrea Ministry of Health, Non-Communicable Diseases Policy, 2008.
- [86]. Ministère de la Santé et de la Lutte contre le Sida, Politique Nationale de Prévention et de Prise en charge des Maladies Chroniques Non Transmissibles en Côte d'Ivoire, 2015–2019, République de Côte d'Ivoire, Ministère de la Santé et de la Lutte contre le Sida, 2014.
- [87]. Federal Democratic Republic of Ethiopia Ministry of Health, Guideline for Cervical Cancer Prevention and Control in Ethiopia, Federal Democratic Republic of Ethiopia Ministry of Health, 2015.
- [88]. Strategic Plan for the Prevention and Control of Cervical Cancer in The Gambia: 2016–2020.
- [89]. Ministry of Public Health and Sanitation & Ministry of Medical Services, National Cervical Cancer Prevention Program Strategic Plan 2012–2015, Division of Reproductive Health Ministry of Public Health & Sanitation, Kenya, 2012.
- [90]. Ministry of Health Kenya, Kenya National Cancer Screening Guidelines, Nairobi, 2018.
- [91]. Ministry of Health, National Strategy for Cancer control in Ghana 2012–2016, Republic of Ghana Ministry of Health, 2011.
- [92]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Ghana, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [93]. Plan Stratégique National de la Lutte contre le Cancer du Col utérin Madagascar 2016–2020.
- [94]. Bruni L, Albero G, Serrano B, Mena M, Gómez D, Muñoz J, Bosch FX, de Sanjosé S, in: Centre IICoHaCHI (Ed.), Human Papillomavirus and Related Diseases in Madagascar, 2019.

- [95]. World Health Organization, Guinea Cancer Country Profile 2021, 2021.
- [96]. Republic of Mauritius, National Cancer Control Action Plan, 2010–2014.
- [97]. Republic of Rwanda Ministry of Health, National Family Planning and Adolescent Sexual and Reproductive Health (FP/ASRH) Strategic Plan (2018–2024), 2018.
- [98]. Ministry of Health, Rwanda Non-communicable Diseases National Strategic Plan July 2014–June 2019, 2014.
- [99]. Ministry of Health, in: Republic of Rwanda (Ed.), Health Sector Annual Report: July 2016–June 2017, 2017.
- [100]. Republic of Seychelles Ministry of Health, Seychelles Strategy for the Prevention and Control of Non-communicable Diseases, 2016–2025, 2016.
- [101]. Ministry of Health, Reproductive Health Policy for Seychelles, 2012.
- [102]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Mali, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [103]. Ministère De La Santé Publique Direction Generale De La Santé Publique Programme National De Lutte Contre Les Maladies Non Transmissibles, Plan Stratégique National Intègre de Prévention et de Lutte Contre les Maladies Chroniques Non Transmissibles, Niger, 2012.
- [104]. Reproductive and Child Health Section, National Cervical Cancer Prevention and Control Strategic Plan 2011–2015, The United Republic of Tanzania Ministry of Health and Social Welfare, 2011.
- [105]. Ministry of Health C.D., Gender, Elderly and Children, The National Road Map Strategic Plan to Improve Reproductive, Maternal, Newborn, Child & Adolescent Health in Tanzania (2016–2020), United Republic of Tanzania Ministry of Health, Community Development, Gender, Elderly and Children, 2016.
- [106]. Federal Ministry of Health, National Multi-Sectoral Action Plan for the Prevention and Control of Non Communicable Diseases (2019–2025), Federal Republic of Nigeria Federal, 2019.
- [107]. The Republic of Uganda Ministry of Health, Strategic Plan for Cervical Cancer Prevention and Control in Uganda 2010–2014, 2010.
- [108]. Gavi, Uganda Joint Appraisal 2019, 2019.
- [109]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Senegal, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [110]. Ministère de la Santé et de l'Action Sociale, Plan Stratégique de Lutte Contre le Cancer 2015–2019. Senegal R.d. (Ed.), n.d.
- [111]. Gavi, Sierra Leone Joint Appraisal 2019, 2019.
- [112]. Bruni L, Albero G, Mena M, Serrano B, Gomez D, Munoz J, Bosch F, de Sanjose S, Human Papillomavirus and Related Diseases in Sierra Leone, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre), 2019.
- [113]. République Togolaise Ministère De La Santé- Lome, Politique et Plan stratégique intégré de lutte contre les maladies non transmissibles 2012–2015, 2012.
- [114]. Ministère De La Santé, Plan Cancer Togo 2016–2020, 2015.

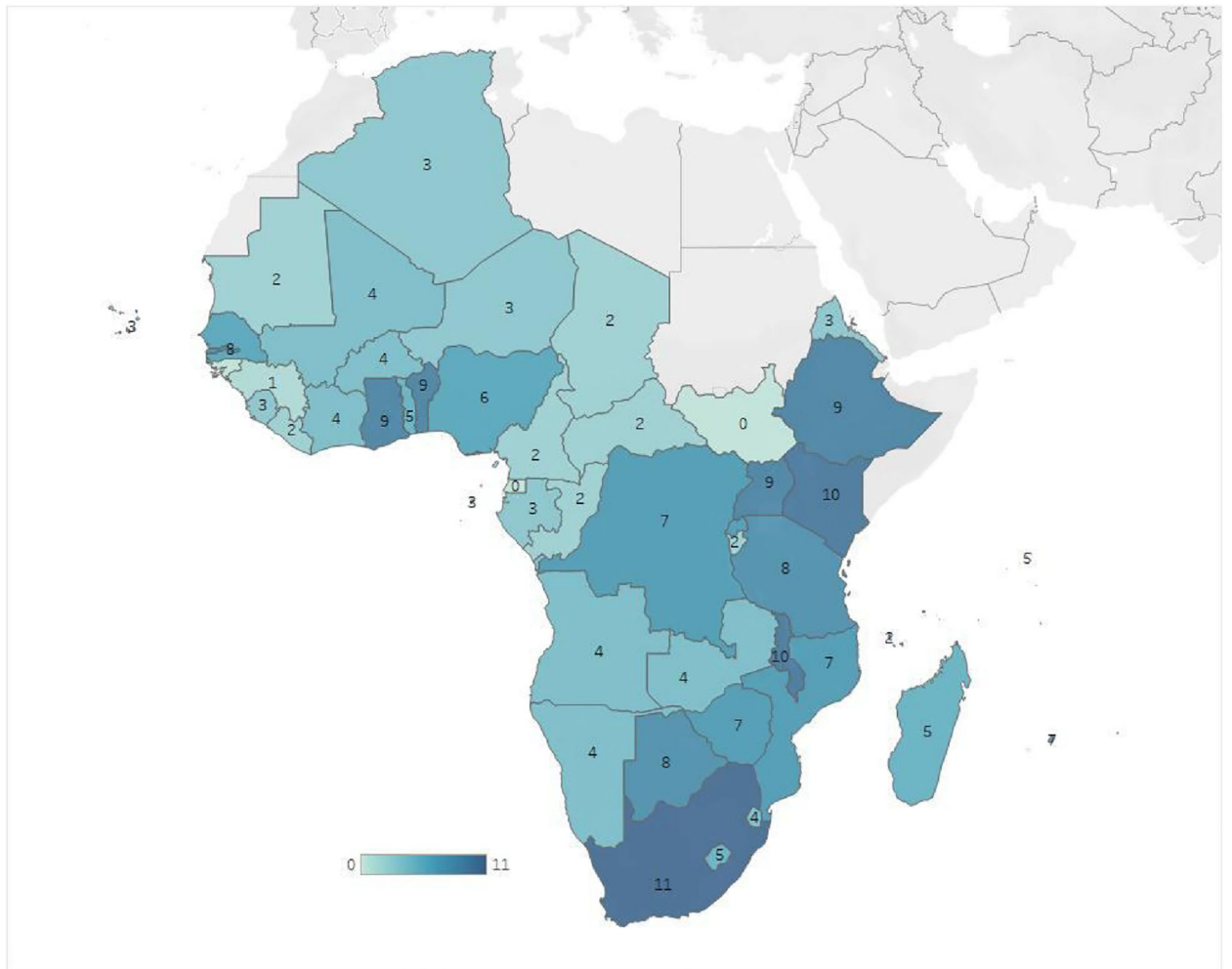


Fig. 1. Cervical cancer policy comprehensiveness across Africa. Numbers indicate total scores, which can range from 0 to 12. Darker blue denotes higher scores. Countries in grey were not included in this analysis.

Table 1

Data extraction and analysis approach.

	1 point assigned for information provided on:	Score range
Primary prevention	<ul style="list-style-type: none"> • HPV vaccine type or schedule • Target age for HPV vaccination • Setting for HPV vaccination • Education or sensitization efforts 	0–4
Secondary prevention	<ul style="list-style-type: none"> • Screening method • Target age for routine screening • Routine screening schedule • Lesion treatment method • Lesion treatment protocol • Awareness-raising activities 	0–6
Tertiary prevention	<ul style="list-style-type: none"> • Cancer treatment methods • Palliative care approach 	0–2
Total possible points		0–12

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 2

Points assigned to each country's cervical cancer policies (for primary, secondary and tertiary prevention, and in total).

	TOTAL	Primary	Secondary	Tertiary	TOTAL	Primary	Secondary	Tertiary
Central Africa								
Burundi	2	2 [49]	0	0	4	2 [50,51]	2 [50,51]	0
Cameroon	2	1 [49]	0	1 [52]	8	4 [49,53]	4 [53,54]	0
Central African Republic	2	1 [55]	1 [55]	0	4	0	4 [56,57]	0
Chad	2	0	2 [58]	0	5	2 [59]	3 [60]	0
Congo	2	1 [61]	1 [62]	0	10	3 [63,64]	5 [63]	2 [63]
Democratic Rep. of Congo	7	1 [65]	4 [65]	2 [65]	7	3 [66,67]	4 [66,68]	0
Equatorial Guinea	0	0	0	0	4	0	4 [69,70]	0
Gabon	3	0	3 [71]	0	11	4 [72]	5 [72]	2 [72,73]
Sao Tome and Principe	3	3 [74]	0	0	4	1 [49]	3 [75]	0
Northern Africa								
Algeria	3	0	3 [79]	0	7	3 [76,77]	2 [78]	2 [78]
Mauritania	2	2 [49]	0	0	9	2 [80]	5 [80]	2 [80]
Eastern Africa								
Comoros	2	0	2 [83]	0	4	1 [81]	3 [81,82]	0
Eritrea	3	1 [49]	0	2 [85]	3	1 [49]	2 [84]	0
Ethiopia	9	3 [49]	4 [87]	2 [87]	8	2 [49]	2 [86]	0
Kenya	10	4 [89]	4 [90]	2 [89]	9	3 [49,88]	3 [88]	2 [88]
Madagascar	5	0	4 [93,94]	1 [93]	2	3 [91]	5 [91,92]	1 [91]
Mauritius	7	3 [49,96]	2 [96]	2 [96]	0	0	2 [95]	0
Rwanda	7	3 [97]	3 [62,98]	1 [99]	2	2 [49]	0	0
Seychelles	5	2 [49,100]	3 [101]	0	4	1 [49]	3 [102]	0
South Sudan	0	0	0	0	3	0	1 [103]	2 [103]
Tanzania	8	3 [104]	4 [104,105]	1 [105]	6	2 [106]	3 [106]	1 [106]
Uganda	9	3 [107,108]	4 [107]	2 [107]	6	2 [49]	3 [109]	1 [110]
Sierra Leone	3	2 [111]	1 [112]	0	3	2 [111]	1 [112]	0
Togo	5	2 [49,113]	3 [113,114]	0	5	2 [49,113]	3 [113,114]	0

Table 3

Median number of cervical cancer policy components, by country grouping.

Policy and financing context		
NCD policy [25]	Countries <u>with</u> an operational, multisectoral national NCD policy, strategy or action plan (n = 21)	Median score: 5
	Countries <u>without</u> an operational, multisectoral national NCD policy, strategy or action plan (n = 26)	Median score: 4
Female representation in government [26]	Countries with <u>greater</u> female representation in government (30 % of government ministerial positions filled by women) (n = 21)	Median score: 4
	Countries with <u>lesser</u> female representation in government (<30 % of government ministerial positions filled by women) (n = 26)	Median score: 8
External financing for health [25]	Countries with <u>greater</u> external financing for health (21.4 % external health expenditure, as percentage of total health expenditure) (n = 17)	Median score: 5
	Countries with <u>lesser</u> external financing for health (<21.4 % external health expenditure, as percentage of total health expenditure) (n = 30)	Median score: 4
Geographic and economic context		
Poverty prevalence [23]	Countries with <u>greater</u> poverty (44.9 % of population below national poverty line) (n = 24)	Median score: 4
	Countries with <u>lesser</u> poverty (<44.9 % of population below national poverty line) (n = 23)	Median score: 4
Income inequality [23]	Countries with <u>greater</u> income inequality (43.8 Gin. Index) (n = 19)	Median score: 4
	Countries with <u>lesser</u> income inequality (<43.8 Gin. index) (n = 28)	Median score: 4
African region [22]	Countries in <u>Central</u> Africa (n = 9)	Median score: 2
	Countries in <u>Eastern</u> Africa (n = 11)	Median score: 7
	Countries in <u>Northern</u> Africa (n = 2)	Median score: 3
	Countries in <u>Southern</u> Africa (n = 10)	Median score: 6
	Countries in <u>Western</u> Africa (n = 15)	Median score: 4
Burden of disease		
Female life expectancy [23]	Countries with <u>longer</u> life expectancy (64.9 years from birth) (n = 19)	Median score: 5
	Countries with <u>shorter</u> life expectancy (<64.9 years from birth) (n = 28)	Median score: 4
HIV prevalence [24]	Countries with <u>higher</u> HIV prevalence (5.9 % among females aged 15+) (n = 13)	Median score: 7
	Countries with <u>lower</u> HIV prevalence (<5.9 % among females aged 15+) (n = 32)	Median score: 3
Cervical cancer mortality rate [2]	Countries with <u>greater</u> cervical cancer mortality (25.9 age-standardized deaths per 100,000)	Median score: 4
	Countries with <u>lesser</u> cervical cancer mortality (<25.9 age-standardized deaths per 100,000)	Median score: 4

Table 4

Policy details.

PRIMARY PREVENTION		
Total points (<i>range 0–4</i>)	0 points: n = 12 1 point: n = 9 2 points: n = 12 3 points: n = 11 4 points: n = 3	
Policy details	n countries mentioning	Details and frequencies
Target age for HPV vaccination	32	9-year-old girls: n = 8 9-to 13-year-old girls: n = 7 10-year-old girls: n = 7 9-to 14-year-old girls: n = 3 14 years old: n = 2 7 years old: n = 1 11-to 12-year old girls: n = 1 “Preadolescent girls”: n = 1 10 to 14-year-old girls: n = 1 10–11-year-old girls: n = 1
HPV vaccine type or schedule [‡]	20	Type [‡] : Gardasil: n = 3 Nonspecific quadrivalent vaccine: n = 1 Cervarix: n = 1 Nonspecific bivalent vaccine: n = 1 Gardasil and Cervarix: n = 1 Schedule: Two doses 6 months apart: n = 15 Two doses 6–12 months apart: n = 1 Two doses no timeframe specified: n = 2 Three doses: n = 1
Education or sensitization efforts	14	Education campaigns about risk factors for cervical cancer [‡] : Sexual behavior: n = 6 Tobacco use: n = 7 Non-specific topics: n = 9
Setting for HPV vaccination	12	Setting for vaccination [‡] : Schools: n = 12 Approaches for out-of-school and other girls e.g. via health system, community-based campaigns: n = 6
SECONDARY PREVENTION		
Total points (<i>range 0–6</i>)	0 points: n = 9 1 point: n = 4 2 points: n = 8 3 points: n = 12 4 points: n = 9 5 points: n = 4 6 points: n = 0	
Policy details	n countries mentioning	Details and frequencies
Screening method	35	VIA (at all): n = 33 VIA only: n = 16 VIA + cytology/Pap: n = 12 VIA, + cytology/Pap + HPV DNA testing: n = 5 Cytology only: n = 2 Cytology + HPV DNA testing: n = 1
Target age for routine screening	30	Begin at [‡] : Age 20: n = 1 Age 25: n = 15 Age 30: n = 10 Age 35: n = 2 2 years after sexual debut (no specific age): n = 1 Stop at: Age 50: n = 4 Age 65: n = 6

		Age 45: n = 2 Age 49: n = 6 Age 55: n = 2 Age 59: n = 2 Age 70: n = 1 No upper age limit: n = 2
	21	Annual: n = 2 Every 2 years: n = 3 Every 3 years: n = 7 Every 3–5 years: n = 6 Every 5 years: n = 2 Every 10 years: n = 1
Routine screening schedule		
	18	Method [‡] : Cryotherapy (at all): n = 17 LEEP (at all): n = 13 Thermocoagulation (at all): n = 4 Cold knife cone (at all): n = 4 LLETZ (at all): n = 2
Lesion treatment method		
	3	Recheck after 6 months + annual screening for 5 years: n = 1 Annual screening for 3 years: n = 1 Screening every 3 years until normal: n = 1
Lesion treatment protocol		
	9	Education campaigns about screening for cervical cancer: n = 9
Awareness-raising activities		
TERTIARY PREVENTION		
		0 points: n = 28 1 point: n = 7 2 points: n = 12
Total points (<i>range 0–2</i>)		
Policy details	n countries mentioning	Details and frequencies
		Surgery + radiation + chemotherapy: n = 13 Radiotherapy alone: n = 2 Chemotherapy alone: n = 1 Surgery alone: n = 2
Cancer treatment methods	18	
	13	Pain relief: n = 9 Psychosocial, familial and spiritual support: n = 4
Palliative care approach		

[‡]One point assigned for type and/or schedule (a policy with both would obtain 1 point).

[‡]Policies may be included in more than 1 row/count if they included more than 1 listed component.