

Dartmouth College Dartmouth Digital Commons

Open Dartmouth: Faculty Open Access Articles

9-1-2013

Integration of Comprehensive Women'S Health Programmes into Health Systems: Cervical Cancer Prevention, Care and Control in Rwanda

Agnes Binagwaho

Ministry of Health of Rwanda, Kigali, Rwanda.

Fidele Ngabo

Ministry of Health of Rwanda, Kigali, Rwanda.

Claire M. Wagner

Global Health Delivery Partnership

Cathy Mugeni

Ministry of Health of Rwanda, Kigali, Rwanda.

Maurice Gatera

Rwanda Biomedical Center, Kigali, Rwanda

See next page for additional authors

Follow this and additional works at: <https://digitalcommons.dartmouth.edu/facoa>

 Part of the [Medicine and Health Sciences Commons](#)

Recommended Citation

Binagwaho, Agnes; Ngabo, Fidele; Wagner, Claire M.; Mugeni, Cathy; Gatera, Maurice; Nutt, Cameron T.; and Nsanzimana, Sabin, "Integration of Comprehensive Women'S Health Programmes into Health Systems: Cervical Cancer Prevention, Care and Control in Rwanda" (2013). *Open Dartmouth: Faculty Open Access Articles*. 3598.

<https://digitalcommons.dartmouth.edu/facoa/3598>

This Article is brought to you for free and open access by Dartmouth Digital Commons. It has been accepted for inclusion in Open Dartmouth: Faculty Open Access Articles by an authorized administrator of Dartmouth Digital Commons. For more information, please contact dartmouthdigitalcommons@groups.dartmouth.edu.

Authors

Agnes Binagwaho, Fidele Ngabo, Claire M. Wagner, Cathy Mugeni, Maurice Gatera, Cameron T. Nutt, and Sabin Nsanzimana

Integration of comprehensive women's health programmes into health systems: cervical cancer prevention, care and control in Rwanda

Agnes Binagwaho,^a Fidele Ngabo,^a Claire M Wagner,^b Cathy Mugeni,^a Maurice Gatera,^c Cameron T Nutt^d & Sabin Nsanzimana^c

Problem Although it is highly preventable and treatable, cervical cancer is the most common and most deadly cancer among women in Rwanda.

Approach By mobilizing a diverse coalition of partnerships, Rwanda became the first country in Africa to develop and implement a national strategic plan for cervical cancer prevention, screening and treatment.

Local setting Rwanda – a small, landlocked nation in East Africa with a population of 10.4 million – is well positioned to tackle a number of “high-burden” noncommunicable diseases. The country's integrated response to infectious diseases has resulted in steep declines in premature mortality over the past decade.

Relevant changes In 2011–2012, Rwanda vaccinated 227 246 girls with all three doses of the human papillomavirus (HPV) vaccine. Among eligible girls, three-dose coverage rates of 93.2% and 96.6% were achieved in 2011 and 2012, respectively. The country has also initiated nationwide screening and treatment programmes that are based on visual inspection of the cervix with acetic acid, testing for HPV DNA, cryotherapy, the loop electrosurgical excision procedure and various advanced treatment options.

Lessons learnt Low-income countries should begin to address cervical cancer by integrating prevention, screening and treatment into routine women's health services. This requires political will, cross-sectoral collaboration and planning, innovative partnerships and robust monitoring and evaluation. With external support and adequate planning, high nationwide coverage rates for HPV vaccination and screening for cervical cancer can be achieved within a few years.

Abstracts in [عربي](#), [中文](#), [Français](#), [Русский](#) and [Español](#) at the end of each article.

Background

Cervical cancer is among the most common cancers affecting women around the world.¹ The estimated annual number of deaths from cervical cancer – 275 000 – is similar to the annual number of maternal deaths in childbirth.^{1,2} As is the case with many other diseases, cervical cancer disproportionately affects the poorest populations. Overall, 77% of new cases of cervical cancer³ and 88% of deaths attributed to such cancer¹ occur in the developing world, where 95% of women have never been screened for the disease.⁴

With adequate screening and early detection, the progression of precancerous cervical lesions can be completely arrested in most cases, and cervical cancers in an early stage are highly treatable. As a result, high-income countries with good levels of screening have seen dramatic declines in the incidence and mortality of cervical cancer in recent decades.⁵

Nearly all cases of cervical cancer are caused by the human papillomavirus (HPV).⁶ Two prophylactic HPV vaccines can each prevent up to 70% of cervical cancer cases and perhaps also some cancers of the vulva, vagina, anus, penis and oropharynx that are related to HPV.⁶ These vaccines are being rolled out in a growing number of countries on six continents and, with high coverage, could cause massive reductions in the incidence of cervical cancer in coming decades.⁶

Rwanda – a small, landlocked nation in East Africa with a population of 10.4 million – is the first country in Africa to develop and implement a national strategic plan for cervical

cancer prevention, care and control. Rwanda is well positioned to tackle some “high-burden” cancers, as its integrated response to infectious diseases has resulted in steep declines in premature mortality over the past decade.⁷ In the present paper, we describe Rwanda's strategic plan for cervical cancer and its integration into the national health system; report the plan's progress to date; and offer recommendations to other countries at similar decision points in the formulation of national health policies and the initiation of efforts to combat cervical cancer.

Epidemiological imperative

Eastern Africa has one of the highest levels of mortality among cases of cervical cancer in the world and women in the region have a 2.7% cumulative probability of death from cervical cancer.⁸ According to the age-standardized estimates of the International Agency for Research on Cancer and the World Health Organization, in 2008 Rwanda had 34.5 cases of cervical cancer and 25.4 deaths attributable to cervical cancer per 100 000 inhabitants.⁹ At the time, the incidence of cervical cancer among Rwanda's women appeared to be higher than the combined incidences of breast, liver and stomach cancer.⁹ Female life expectancy at birth in Rwanda has climbed steadily in recent years – to 61 years in 2011¹⁰ – after stagnating between 29 and 35 years in the period surrounding the genocide in 1994.¹¹ The annual incidence of cervical cancer would therefore be expected to rise in the absence of nationwide interventions against the disease.

^a Ministry of Health of Rwanda, Kigali, Rwanda.

^b Global Health Delivery Partnership, 641 Huntington Avenue, Boston MA 02115, United States of America (USA).

^c Rwanda Biomedical Center, Kigali, Rwanda.

^d Dartmouth Center for Health Care Delivery Science, Hanover, USA.

Correspondence to: Claire M Wagner (e-mail: wagner.claire@gmail.com).

(Submitted: 1 December 2012 – Revised version received: 27 May 2013 – Accepted: 30 May 2013)

Despite sustained economic growth since 2000, Rwanda remains one of the poorest countries in the world and does not have the financial flexibility to build its own independent programme against cervical cancer. Nearly half of the country's health budget is externally financed.¹² The national government recently had to decide what to do about cervical cancer in the face of many other competing health needs and financial constraints.

Point of departure: HPV vaccine

In 2009 – three years after an HPV vaccine was introduced in the United States of America – advocacy by Jeanette Kagame, the First Lady of Rwanda, led to technical meetings between the Rwandan Ministry of Health and Merck & Co., the manufacturer of the quadrivalent HPV vaccine Gardasil. These negotiations sparked a partnership for the national rollout of the HPV vaccine in Rwanda. Merck agreed to donate approximately 2 million doses of Gardasil over a period of three years and to guarantee concessional pricing of the vaccine to Rwanda and external funders thereafter. Simultaneously, the health ministry initiated the planning phase for a comprehensive national programme for cervical cancer prevention, screening and treatment. A demonstrated readiness to integrate a vaccination for adolescents into Rwanda's national immunization programme decreased the time required to formulate strategy and initiate implementation. By 2010 – before rolling out the HPV vaccine – Rwanda had already achieved coverage rates exceeding 93% of eligible subjects for vaccines against nine diseases, including the pneumococcal conjugate vaccine.¹³ Following a national consultation, Rwanda elected to vaccinate all girls in grade 6 of primary school, for free, on three designated “health days” each year, beginning in 2011.¹⁴ These “health days” are now used not only for HPV vaccination but also for disseminating essential adolescent health messages – to an otherwise hard-to-reach age group – at regular intervals. Beginning in 2012, these “health days” have also been used for a nationwide campaign of deworming for 3.8 million children in primary schools. In 2012, the deworming coincided with the first HPV vaccine dose for the 2012 cohort. In October 2012, delivery of the third

Table 1. Human papillomavirus vaccination coverage, Rwanda, 2011–2012

Coverage	2011			2012		
	Round 1	Round 2	Round 3	Round 1	Round 2	Round 3
No. of girls vaccinated						
In school ^a	91 752	89 704	88 927	137 147	134 645	134 115
Outside school	2 136	3 066	3 180	1 162	845	1 024
Overall	93 888	92 770	92 107	138 309	135 490	135 139
Cumulative coverage (%)^b	95.0	93.9	93.2	98.8	96.8	96.6

^a The three rounds of vaccination in 2011 only covered girls who were in Grade 6 of primary school whereas the rounds in 2012 covered girls who were then in Grade 6 of primary school or the third year of secondary school.

^b The denominator for 2011: 98 792 eligible girls; denominator for 2012: 139 968 eligible girls.

vaccine dose for the 2012 cohort was timed to overlap with another campaign: Rwanda's annual Maternal and Child Health Week. The latter campaign involves sensitization about hand hygiene and reproductive health, delivery of mebendazole, iron and folic acid to pregnant women, and the provision of vitamin A supplementation to children and breastfeeding women.

By enlisting teachers and village leaders in sensitization efforts and by mobilizing the country's 45 000 community health workers to trace out-of-school girls, the HPV vaccination programme achieved a high coverage rate in its first year: 92 107 (93.2%) of the 98 792 eligible girls identified in 2011 were fully vaccinated (Table 1).¹⁴ Two “catch-up” rounds of vaccination targeted girls who were in the third year of secondary school in 2012 or 2013. The aim was to ensure that all girls younger than 15 years in 2011 had the opportunity to receive a full course of HPV vaccination. In 2012, the routine campaign targeting girls in grade 6 of primary school led to 90 188 of the 93 243 eligible girls each receiving three doses, while 394 of 549 out-of-school girls aged 12 years were also fully vaccinated. The corresponding “catch-up” campaign – targeting girls in the third year of secondary school – led to the full vaccination of 43 927 of 45 361 eligible in-school girls and 630 of 815 eligible out-of-school girls aged 14 years. In total, therefore, 135 139 (96.6%) of 139 968 eligible girls were fully vaccinated in 2012 (Table 1).

There has been concern that some countries that are eligible for support from the Global Alliance for Vaccines and Immunisation (GAVI) may lack sufficient capacity to plan adequately, manage cold chain deployment, navigate the nuances of communication, achieve high coverage and mobilize

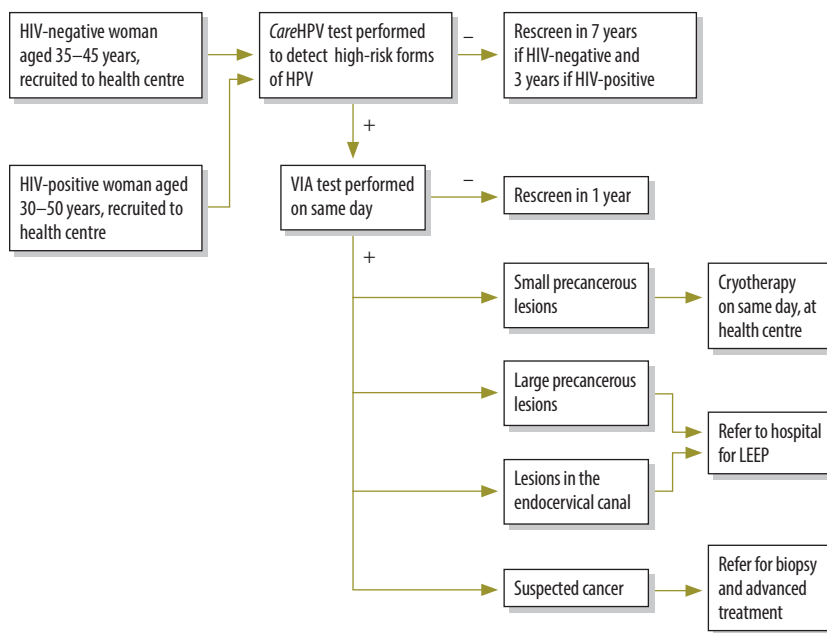
partners to ensure financial sustainability.^{15,16} Rwanda's experience and success in scaling up access to HPV vaccine indicates that these concerns are largely unfounded. Halfway through the first year of Rwanda's HPV vaccination programme, Merck dropped the price of the HPV vaccine by more than 70% from its previous lowest price per dose – from 16.95 to 5.00 United States dollars.¹⁷ Following GAVI's incorporation of the HPV vaccine into its routine funding portfolio in late 2012, further price reductions have been announced, with more expected in the near future.¹⁸ Merck's partnership helped to bridge the gap between Rwanda's aspirations for the prevention of cervical cancer and the actions that the country was able to implement against the disease. Other private sector pharmaceutical and medical device companies have recently declared an interest in Rwanda's programme against cervical cancer. In late 2011, for example, QIAGEN signed a memorandum of understanding with the Rwandan Ministry of Health and agreed to donate equipment and consumables for HPV screening, beginning in 2013.

Continued efforts to engage the population in dialogue about the HPV vaccine will be essential if high coverage is to be sustained in Rwanda. As anti-vaccine activism has begun to find its way – via the Internet and social media – into communities across Africa, the Rwandan Ministry of Health will maintain preparedness through campaigns of mass sensitization and communication with local leaders across the country.

Screening and diagnosis

In high-income countries, screening for cervical cancer is generally integrated into the annual consultations recom-

Fig. 1. Cervical cancer screening and treatment in Rwanda, 2013



HIV, human immunodeficiency virus; HPV, human papillomavirus; LEEP, loop electrosurgical excision procedure; VIA, visual inspection with acetic acid.
 Note: It is expected that 10 to 15% of the women screened with the *CareHPV* test and 15 to 20% of those screened by VIA will give a positive result (+). Of the women found to have abnormalities when visually inspected, 75% are expected to have small precancerous lesions that can be covered by a cryoprobe; 20% are expected to have large precancerous lesions or lesions in the endocervical canal that cannot be covered by a cryoprobe, and 5% are expected to have lesions suggestive of cervical cancer.

mended for women. However, in many low- and middle-income countries most women do not have access to such regular encounters with the primary-health-care system. Fortunately, screening methods for cervical cancer are diverse and easily implemented. They include testing for HPV DNA, the Papanicolaou – or “pap smear” – test, visual inspection with acetic acid, colposcopy and biopsy. Precancerous lesions, or dysplasia, can take 10 to 20 years to develop into cervical cancer. Therefore, even though early detection is crucial, screening for cervical cancer can be effectively conducted at longer intervals than screening for breast cancer or other forms of cancer that progress more rapidly than cervical cancer.⁴ The costly and complex Papanicolaou tests appear to be of similar sensitivity and specificity to the cheaper and simpler visual inspection with acetic acid, whereas colposcopy and biopsy require specialization. In the detection pathway developed by Rwanda and its partners, testing for HPV DNA is therefore followed by visual inspection with acetic acid and then, when necessary, by colposcopy and biopsy (Fig. 1).

Before the implementation of the national strategic plan for cervical

cancer prevention, care and control, visual inspection of the cervix with acetic acid was offered sporadically at several public and private health facilities across Rwanda. With the equipment and consumables donated by QIAGEN, Rwanda will now scale up access to a more diverse set of screening options for cervical cancer that will initially be offered in five district hospitals and 15 health centres in these hospitals’ catchment areas beginning in June 2013. If everything goes to plan, cervical cancer screening in Rwanda will be decentralized to 30 public hospitals and nearly 100 health centres by 2015. Between 2013 and 2016, QIAGEN will donate 250 000 assays and 29 machines for its *careHPV* DNA testing system, while the Rwandan government and other partners will finance the scale-up of visual inspection of the cervix with acetic acid. As it is predicted that 18 700 of the donated *careHPV* assays will be used incorrectly or for repeat tests, it has been estimated that QIAGEN’s support will allow 231 300 Rwandan women to be tested for the DNA of the forms of HPV associated with cervical cancer.

Since December 2012, nurses and physicians performing the screening

tests have been receiving intensive training. Eight national pathology trainers will be trained by the American Society for Clinical Pathology, and QIAGEN has already trained eight laboratory technicians as trainers in reading the results of tests for HPV DNA and histopathology. Several of these 16 trainers will together train another 32 pathologists and laboratory technicians by the end of 2013. The National Reference Laboratory in Kigali will receive technical support to assume full responsibility for diagnosing cervical cancer by 2015.

Starting in June 2013, at standard meetings with nurses in Rwanda’s 15 000 villages, community health workers will be told the dates when a mobile team of one physician and two to four nurses will visit the local health centre for HPV screening over a three-day period. The community health workers will enroll women for free screening and then return the corresponding enrolment forms to the local health centre. The ages of the women enrolled will depend on whether they have been found infected with human immunodeficiency virus (HIV) – women known to be HIV-positive and aged 30 to 50 years will be enrolled, as well as other women aged 35 to 45 years. Nurses will then report to the district level, indicating the number of women enrolled for each screening day. These reports will allow the mobile teams to determine the quantity of reagents needed and the likely duration of the screening on each screening day. With this system, it is expected that approximately 360 women will be tested in a single day by each team. Each screened woman will be asked to stay at the health centre for a few hours, until the results of her test are available. While waiting, she will be educated about cervical cancer and other aspects of reproductive health.

Treatment and palliative care

The size, location and stage of a precancerous or cancerous lesion determine the choice of treatment. The options include cryotherapy, the loop electrosurgical excision procedure (LEEP), laser surgery, hysterectomy, chemotherapy and radiation therapy. For women who receive cryotherapy or LEEP – two of the most common methods for treatment of early lesions in low-income settings – cure rates, with the recommended standard of care, approach 90%.¹⁹ Given

Box 1. Summary of main lessons learnt

- It is feasible for low-income countries to integrate cervical cancer prevention, screening and treatment into routine women's health services.
- Such integration requires political will, cross-sectoral collaboration and planning, innovative partnerships and robust monitoring and evaluation.
- With external support and adequate planning, high nationwide coverage rates for HPV vaccination and screening for cervical cancer can be achieved within a few years.

this success rate – and the potential to integrate screening for, and treatment of, precancerous cervical lesions into routine services for maternal and child health, sexual and reproductive health, and care for patients infected with HIV infection – Rwanda chose to focus first on cryotherapy and LEEP.

Cryotherapy involves using a cryoprobe emitting carbon dioxide or nitrous oxide to freeze precancerous lesions on the cervix. This procedure can generally be performed within 15 minutes by a trained physician, nurse or midwife at a health centre. LEEP – which is primarily used for the removal of large lesions that cannot be covered with a cryoprobe or the removal of lesions involving the endocervical canal – is performed by physicians in hospital settings. In this procedure, a thin, electrically heated wire is used to remove lesions and any transformed tissue, after the patient has been given local anaesthesia.

Both cryotherapy and LEEP will be scaled up for use in the same catchment areas and on the same timeline as HPV testing, and will be provided for free on an outpatient basis. Cryotherapy will be available at health centres and hospitals, whereas LEEP will only be available in hospitals. If a woman requires more involved treatment for cervical cancer – such as surgery, chemotherapy or radiotherapy – she will be immediately referred for biopsy and the necessary advanced treatment. Although radiotherapy is not yet possible in the country, Rwanda became a member of the International Atomic Energy Agency – an essential precursor to constructing an in-country radiation facility – in September 2012. As part of the Rwandan Human Resources for Health Programme, the Faculty of Medicine of the National University of Rwanda has begun a four-year residency programme in pathology and it is hoped that, in consequence, 12 new pathologists will have graduated – and many more will be in training – by 2018.

Little palliative care has been available in Rwanda because of the insuf-

ficient human resources available for health care and the many competing priorities for funding and advocacy.²⁰ However, the national strategic plan for cervical cancer prevention, care and control is part of a larger movement in Rwanda that aims to promote palliation. As the country moves towards tackling noncommunicable diseases – including the drafting of a strategic plan for the control of such diseases and the care of patients with such diseases – it is simultaneously strengthening comprehensive patient care, including palliative and end-of-life care. Rwanda's National Palliative Care Policy was launched in April 2011.²¹ By December 2012, 85% of providers at the 42 district hospitals in the country had been trained on the national guidelines for palliation. Morphine was added to the national Essential Medicines List and is in the process of being included in the supply chains of the 42 district hospitals and the health centres in the hospitals' catchment areas. The health ministry is currently exploring the feasibility of training up to 30 000 new community health workers in the provision of palliative care at the community level for patients with HIV infection, cancer and other chronic conditions.

Programme costs and sustainability

The launching of the first national programme for cervical cancer prevention, care and control in Africa required a commitment to plan for both long-term sustainability and a high level of adaptability in a dynamic situation. Merck and QIAGEN committed themselves to donating to Rwanda and its funding partners HPV vaccines and DNA testing machines and kits, respectively, for three-year periods, and to offer concessional pricing thereafter. These donations have been complemented by a range of investments by the Rwandan government in additional equipment

and consumables, building supply chain capacity, training and communication campaigns.

In May 2013, GAVI announced that it would support Rwanda's national HPV vaccination programme after Merck's donation ends in 2014.²² A coalition of partners engaged in building Rwanda's cancer response, including the United States Centers for Disease Control and Prevention, will assist in scaling up cervical cancer screening, treatment and palliation.²³ The Rwandan government has committed itself to co-funding these activities and expects that investments in vaccination and early detection will be offset by the prevention of invasive cancers and premature deaths.²⁴ The results of an in-depth costing analysis of vaccination, screening and treatment activities will be presented in a future article.

Conclusion

Rwanda's experience shows that – just as international funding mechanisms for HIV infection, tuberculosis and malaria have been harnessed to strengthen primary care – a programme for the control of cervical cancer can be used to catalyse country investment in comprehensive systems of cancer care.²⁵ A new partnership with Susan G Komen for the Cure that was launched in late 2012 will target the screening and treatment of breast cancer in Rwanda.⁹ In collaboration with development partners, the Rwandan Ministry of Health opened its first comprehensive cancer centre, at Butaro District Hospital, in July 2012. An additional ambulatory cancer care centre was opened at the hospital in June 2013. Several of Rwanda's referral hospitals have maintained cancer registries over different periods since the 1990s; a national cancer registry initiated in 2011 is now being scaled up to cover selected district hospitals across the country.²³

The key lessons learnt during the early phases of Rwanda's cervical cancer programme (Box 1) include the value of cross-sectoral collaboration and planning: of engaging development partners, the national ministries of finance, gender, youth and education, and local government; of conducting sustained campaigns of communication and social mobilization that involve local leaders; of rigorously monitoring vaccination coverage over time; and of systematically integrat-

ing routine health services for women into the primary-health-care system.

The world now has the tools to prevent most cases of cervical cancer and most deaths from the disease in the coming decades, and these technologies will certainly be brought to bear in resource-rich countries, where the burden of cervical cancer continues to decline.⁶ However, if investments are not made in delivering on public health's potential to address cervical cancer among the poorest populations, inequalities in outcome will grow even as the relevant technology continues to improve. As a pathology of poverty at the convergence of infectious and noncommunicable diseases, cervical cancer should feature

prominently in an integrated, post-2015 development agenda.²⁶

Equitable access to the integrated prevention, care and treatment of cervical cancer should be viewed as a triple – epidemiological, economic and moral – imperative.²⁷ The cost of inaction is massive and untenable. It has been estimated that every five-year delay in scaling up services for cervical cancer vaccination alone (not to mention screening and treatment) in developing countries will cost the lives of up to 2 million additional women – many of them of reproductive age and actively engaged in the workforce.²⁸ Ongoing efforts in Rwanda and other countries to monitor the incidence of cervical cancer and its

related mortality, the costs and impact of HPV vaccination and screening, and treatment outcomes, will help to inform global efforts to promote evidence-based action against cervical cancer. From Rwanda's perspective, the choice is clear: it is time to stop debating whether to act and to start fruitful exchanges on how best to expand women's access to preventive and curative services, optimize service quality and ensure programme sustainability. ■

Competing interests: None declared.

ملخص

دمج برامج الصحة الشاملة للمرأة في النظم الصحية: توقي سرطان عنق الرحم ورعايته ومكافحته في رواندا

عامي 2011 و2012، على التوالي. وبدأت البلد كذلك في برامج التحري والعلاج على الصعيد الوطني التي استندت على الفحص البصري لعنق الرحم باستخدام حمض الخليك، وفحص الحمض النووي لفيروس الورم الحليمي البشري، والمعالجة بالتبريد، وإجراء الاستئصال العرووي بالجراحة الكهربائية وعدد من خيارات العلاج المتقدمة.

الدروس المستفادة ينبغي أن تبدأ البلدان المنخفضة الدخل التعامل مع سرطان عنق الرحم عن طريق دمج التوقي والفحص والعلاج في الخدمات الصحية الروتينية للمرأة. ويتطلب ذلك إرادة سياسية وتعاوناً وتخطيطاً بين جميع القطاعات وشراكات مبتكرة ورسداً وتقييماً قوياً. ومن خلال الدعم الخارجي والتخطيط الملثم، يمكن تحقيق معدلات تغطية مرتفعة على الصعيد الوطني في تطعيم فيروس الورم الحليمي البشري وفحصه في سرطان عنق الرحم في غضون بضع سنوات.

المشكلة على الرغم ارتفاع القدرة على توقي سرطان عنق الرحم وعلاجه، إلا أنه أكثر أنواع السرطان شيوعاً وأكثرها فتكاً بين النساء في رواندا. الأسلوب عن طريق حشد تحالف متنوع من الشراكات، أصبحت رواندا أول بلد في أفريقيا يضع وينفذ خطة استراتيجية وطنية لتوقي سرطان عنق الرحم وفحصه وعلاجه.

المواقع المحلية رواندا – دولة غير ساحلية صغيرة يبلغ عدد سكانها 10.4 مليون نسمة وتقع في شرق أفريقيا – وهي في وضع جيد يتيح لها مواجهة عدد من الأمراض غير السارية ذات "العبء الثقيل". ونتج عن المقاومة المتكاملة للأمراض المعدية في البلد انخفاضات حادة في معدل الوفيات المبكرة على مدار العقد المنصرم.

التغيرات ذات الصلة في الفترة من 2011 إلى 2012، قامت رواندا بتطعيم 227246 فتاة بكل الثلاث جرعات من لقاح فيروس الورم الحليمي البشري. وتم تحقيق معدلات التغطية للثلاث جرعات، بين الفتيات المؤهلات، بنسبة 93.2% و96.6% في

摘要

综合妇女健康计划与卫生系统整合：卢旺达宫颈癌的预防、护理和控制

问题 虽然宫颈癌高度可防可治，但是对于卢旺达妇女却是最常见和最致命的癌症。

方法 通过动员多样化的伙伴关系联盟，卢旺达成为非洲第一个制定和实施宫颈癌预防、筛查和治疗国家战略计划的国家。

当地状况 卢旺达（一个人口 1040 万的东非内陆国家）已作好准备来应对一批“高负担”非传染性疾病。在过去十年，该国对传染性疾病的综合反应已经使得过早死亡率急剧下降。

相关变化 在 2011 - 2012 年，卢旺达为 227246 名女孩接种所有三剂人类乳头状瘤病毒 (HPV) 疫苗。在符合条件的女孩中，分别在 2011 年和 2012 年实现三剂疫苗

93.2% 和 96.6% 的覆盖率。该国还发起全国性的筛查和治疗方案，该方案基于使用醋酸的子宫颈目视检查、HPV DNA 测试、冷冻治疗、电圈切除术和各种先进的治疗选项。

经验教训 低收入国家应该通过将预防、筛查和治疗与常规妇女保健服务整合来着手解决宫颈癌。这需要政治意愿、跨部门的协作和规划、创新的合作伙伴关系和强大的监测和评估。利用外部的支持和充分的规划，可在几年内实现全国 HPV 疫苗和宫颈癌筛查高覆盖率。

Résumé

Intégration de programmes de soins complets pour les femmes dans les systèmes de santé: prévention, traitement et lutte contre le cancer du col de l'utérus au Rwanda

Problème Bien qu'il soit possible de le prévenir et de le guérir, le cancer du col de l'utérus est le cancer le plus fréquent et le plus mortel chez les femmes au Rwanda.

Approche En mobilisant une coalition hétéroclite de partenariats, le Rwanda est devenu le premier pays d'Afrique à développer et à mettre en œuvre un plan stratégique national pour la prévention, le dépistage et le traitement du cancer du col de l'utérus.

Environnement local Le Rwanda, un petit pays enclavé d'Afrique orientale, comptant 10,4 millions d'habitants, est bien positionné pour s'attaquer à un certain nombre de maladies non transmissibles constituant un «lourd fardeau». La réaction intégrée du pays aux maladies infectieuses a entraîné une forte diminution de la mortalité prématurée au cours de la dernière décennie.

Changements significatifs En 2011-2012, le Rwanda a vacciné 227 246 jeunes filles avec les trois doses du vaccin contre le virus du papillome humain (VPH). Parmi les jeunes filles admissibles, les taux

d'administration des trois doses ont atteints 93,2% et 96,6% en 2011 et 2012, respectivement. Le pays a également lancé des programmes nationaux de dépistage et de traitement, basés sur l'inspection visuelle du col avec de l'acide acétique, le test de dépistage de l'ADN du VPH, la cryothérapie, la technique d'excision électrochirurgicale à l'anse et différentes options de traitement avancé.

Leçons tirées Les pays à faible revenu devraient commencer à lutter contre le cancer du col de l'utérus en intégrant la prévention, le dépistage et le traitement dans les services de soins de santé féminins de routine. Cela exige une volonté politique, une collaboration et une planification intersectorielle, des partenariats innovants, ainsi qu'un suivi et une évaluation solides. Avec un soutien externe et une planification adéquate, on peut atteindre en quelques années des taux nationaux élevés de vaccination contre le VPH et de dépistage du cancer du col de l'utérus.

Резюме

Интеграция комплексных программ по охране здоровья женщин в систему здравоохранения: профилактика, оказание помощи и борьба с раком шейки матки в Руанде

Проблема Несмотря на наличие эффективных методов по профилактике и лечению рака шейки матки, это заболевание является одним из самых распространенных видов рака среди женщин в Руанде, которое наиболее часто приводит к летальному исходу.

Подход Проведя координацию деятельности союзов партнерских организаций, Руанда стала первой африканской страной, которая разработала и внедрила национальный стратегический план по профилактике, выявлению и лечению рака шейки матки.

Местные условия Руанда — небольшая страна с населением 10,4 млн. человек в Восточной Африке, не имеющая выхода к морю. Она занимает выгодное положение для проведения эффективной борьбы с неинфекционными заболеваниями, имеющими тяжелые последствия. Комплексный подход к проведению борьбы с инфекционными заболеваниями в масштабах страны привел к резкому снижению преждевременной смертности за последнее десятилетие.

Осуществленные перемены На протяжении 2011–2012 годов в Руанде была проведена вакцинация 227 246 девочек всеми тремя дозами вакцины против вируса папилломы

человека (ВПЧ). Среди отвечающих установленным критериям девочек, все три дозы вакцины получили 93,2% и 96,6% из них, в 2011 и 2012 годах соответственно. В стране были также развернуты общенациональные программы по выявлению и лечению этого заболевания, предусматривающие визуальное обследование шейки матки с применением уксусной кислоты, тестирование на наличие ДНК ВПЧ, криотерапию, процедуры электрохирургического удаления петель и различные прогрессивные методы лечения.

Выводы Страны с низким уровнем дохода должны приступить к решению проблемы заболеваемости раком шейки матки. С этой целью необходимо произвести интеграцию профилактики, выявления и лечения в стандартную систему медицинского обслуживания женщин. Для этого требуется политическая воля, межотраслевое взаимодействие и планирование, применение инноваций и тщательный контроль наряду с оценкой результатов. При наличии внешней поддержки и адекватного планирования, высокого уровня внедрения программы по вакцинации от ВПЧ в масштабах страны и выявления рака шейки матки можно достигнуть в течении нескольких лет.

Resumen

Incorporación de los programas integrales de salud femenina en los sistemas sanitarios: la prevención, la atención y el control del cáncer de cuello uterino en Rwanda

Situación El cáncer cervical se puede prevenir y tratar en gran medida; aun así, constituye el tipo de cáncer más común y mortal entre las mujeres de Rwanda.

Enfoque Rwanda se convirtió en el primer país de África en desarrollar e implementar un plan estratégico nacional para la prevención, la detección y el tratamiento del cáncer cervical mediante la movilización de una coalición heterogénea de asociaciones.

Marco regional Rwanda, un pequeño país sin litoral situado en el

este de África con una población de 10,4 millones de habitantes, está en condiciones de hacer frente a un conjunto de enfermedades no transmisibles de «alta carga». La respuesta integral del país a las enfermedades infecciosas ha permitido reducir en gran medida la mortalidad prematura durante la última década.

Cambios importantes Entre 2011 y 2012, Rwanda vacunó a 227 246 niñas con las tres dosis de la vacuna contra el virus del papiloma humano (VPH). Entre las chicas que cumplían con los requisitos, se alcanzaron

tasas de cobertura de las tres dosis del 93,2 % y 96,6 % en 2011 y 2012, respectivamente. Asimismo, el país ha puesto en marcha programas de detección y tratamiento a nivel nacional, que se basan en la exploración visual del cuello uterino con ácido acético, pruebas de ADN del VPH, crioterapia, el procedimiento de escisión electroquirúrgica con asa y otros tratamientos avanzados.

Lecciones aprendidas Los países con ingresos bajos deben comenzar a tratar el cáncer cervical mediante la integración de la prevención,

la detección y el tratamiento en los servicios rutinarios de salud femenina. Ello exige voluntad política, la planificación y la colaboración intersectorial, el establecimiento de asociaciones innovadoras, así como una evaluación y un seguimiento sólidos. Este objetivo podría alcanzarse en pocos años mediante la ayuda externa y la planificación adecuada, tasas elevadas de cobertura nacional de vacunación contra el VPH y la detección del cáncer de cuello uterino.

References

1. Ferlay J, Shin HR, Bray F, Forman D, Mathers C, Parkin DM. Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. *Int J Cancer* 2010;127:2893–917. doi: <http://dx.doi.org/10.1002/ijc.25516> PMID:21351269
2. Lozano R, Wang H, Foreman KJ, Rajaratnam JK, Naghavi M, Marcus JR et al. Progress towards Millennium Development Goals 4 and 5 on maternal and child mortality: an updated systematic analysis. *Lancet* 2011;378:1139–65. doi: [http://dx.doi.org/10.1016/S0140-6736\(11\)61337-8](http://dx.doi.org/10.1016/S0140-6736(11)61337-8) PMID:21937100
3. Forouzanfar MH, Foreman KJ, Delossantos AM, Lozano R, Lopez AD, Murray CJ et al. Breast and cervical cancer in 187 countries between 1980 and 2010: a systematic analysis. *Lancet* 2011;378:1461–84. doi: [http://dx.doi.org/10.1016/S0140-6736\(11\)61351-2](http://dx.doi.org/10.1016/S0140-6736(11)61351-2) PMID:21924486
4. Arbyn M, Castellsagué X, de Sanjosé S, Bruni L, Saraiya M, Bray F et al. Worldwide burden of cervical cancer in 2008. *Ann Oncol* 2011;22:2675–86. doi: <http://dx.doi.org/10.1093/annonc/mdr015> PMID:21471563
5. Knaul FM, Frenk J, Shulman L. *Closing the cancer divide: a blueprint to expand access in low and middle income countries*. Boston: Harvard Global Equity Initiative; 2011.
6. Crosbie EJ, Einstein MH, Franceschi S, Kitchener HC. Human papillomavirus and cervical cancer. *Lancet* 2013. Epub 22 April doi: <http://dx.doi.org/10.1136/bmj.f65> PMID:23335479
7. Farmer PE, Nutt CT, Wagner CM, Sekabaraga C, Nuthulaganti T, Weigel JL et al. Reduced premature mortality in Rwanda: lessons from success. *BMJ* 2013;346:f65. doi: <http://dx.doi.org/10.1136/bmj.f65> PMID:23335479
8. *The challenge ahead: progress and setbacks in breast and cervical cancer*. Seattle: Institute for Health Metrics and Evaluation; 2011.
9. International Agency for Research on Cancer [Internet]. GLOBOCAN 2008 – fact sheet: Rwanda. Lyon: IARC; 2008. Available from: <http://globocan.iarc.fr/> [accessed 13 June 2013].
10. *World health statistics 2013*. Geneva: World Health Organization; 2013.
11. The World Bank [Internet]. Life expectancy at birth, female (years). Washington: WB; 2012. Available from: <http://data.worldbank.org/indicator/SP.DYN.LE00.FE.IN?page=3> [accessed 13 June 2013].
12. World Health Organization [Internet]. Global health expenditure database. Geneva: WHO; 2013. Available from: <http://apps.who.int/nha/database/PreDataExplorer.aspx?d=1> [accessed 13 June 2013].
13. World Health Organization [Internet]. WHO vaccine-preventable diseases: monitoring system. 2013 global summary. Coverage time series for Rwanda (RWA). Geneva: World Health Organization; 2013. Available from: http://apps.who.int/immunization_monitoring/globalsummary/coverages?c=RWA [accessed 13 June 2013].
14. Binagwaho A, Wagner CM, Gatera M, Karema C, Nutt CT, Ngabo F. Achieving high coverage in Rwanda's national human papillomavirus vaccination programme. *Bull World Health Organ* 2012;90:623–8. doi: <http://dx.doi.org/10.2471/BLT.11.097253> PMID:22893746
15. Binagwaho A, Wagner CM, Nutt CT. HPV vaccine in Rwanda: different disease, same double standard. *Lancet* 2011;378:1916. doi: [http://dx.doi.org/10.1016/S0140-6736\(11\)61837-0](http://dx.doi.org/10.1016/S0140-6736(11)61837-0) PMID:22137840
16. Binagwaho A. Rwandan health minister hits back at critics of drug company deal. *The Guardian* 2013 21 May. Available from: <http://www.guardian.co.uk/world/2013/may/21/rwanda-health-minister> [accessed 13 June 2013].
17. Global Alliance for Vaccines and Immunisation [Internet]. GAVI welcomes lower prices for life-saving vaccines. Geneva: GAVI; 2011. Available from: <http://www.gavialliance.org/library/news/press-releases/2011/gavi-welcomes-lower-prices-for-life-saving-vaccines/> [accessed 13 June 2013].
18. GAVI injects new life into HPV vaccine rollout. *Lancet* 2013;381:1688. doi: [http://dx.doi.org/10.1016/S0140-6736\(13\)61058-2](http://dx.doi.org/10.1016/S0140-6736(13)61058-2)
19. Sherris J, Wittet S, Kleine A, Sellors J, Luciani S, Sankaranarayanan R et al. Evidence-based, alternative cervical cancer screening approaches in low-resource settings. *Int Perspect Sex Reprod Health* 2009;35:147–54. doi: <http://dx.doi.org/10.1363/3514709> PMID:19805020
20. Spence D, Merriman A, Binagwaho A. Palliative care in Africa and the Caribbean: it must be made a public health priority. *PLoS Med* 2004;1:e5. doi: <http://dx.doi.org/10.1371/journal.pmed.0010005> PMID:15526053
21. Vogel L. Rwanda moving to provide “good deaths” for terminally ill. *CMAJ* 2011;183:E1053–4. doi: <http://dx.doi.org/10.1503/cmaj.109-3963> PMID:21911555
22. Global Alliance for Vaccines and Immunisation [Internet]. Millions of girls in developing countries to be protected against cervical cancer thanks to new HPV vaccine deals. Geneva: GAVI; 2013. Available from: <http://www.gavialliance.org/library/news/press-releases/2013/hpv-price-announcement/> [accessed 13 June 2013].
23. Stefan DC, Elzawawy AM, Khaled HM, Ntaganda F, Asiimwe A, Addai BW et al. Developing cancer control plans in Africa: examples from five countries. *Lancet Oncol* 2013;14:e189–95. doi: [http://dx.doi.org/10.1016/S1470-2045\(13\)70100-1](http://dx.doi.org/10.1016/S1470-2045(13)70100-1) PMID:23561751
24. Ginsberg GM, Edejer TT, Lauer JA, Sepulveda C. Screening, prevention and treatment of cervical cancer – a global and regional generalized cost-effectiveness analysis. *Vaccine* 2009;27:6060–79. doi: <http://dx.doi.org/10.1016/j.vaccine.2009.07.026> PMID:19647813
25. Binagwaho A. Meeting the challenge of NCD: we cannot wait. *Global Heart* 2012;7:1–2. doi: <http://dx.doi.org/10.1016/j.heart.2012.01.004>
26. Alleyne G, Binagwaho A, Haines A, Jahan S, Nugent R, Rojhani A et al.; Lancet NCD Action Group. Embedding non-communicable diseases in the post-2015 development agenda. *Lancet* 2013;381:566–74. doi: [http://dx.doi.org/10.1016/S0140-6736\(12\)61806-6](http://dx.doi.org/10.1016/S0140-6736(12)61806-6) PMID:23410606
27. Broker TR. Global prevention and management of human papillomavirus related diseases: the pressing challenges and the compelling opportunities. *Vaccine* 2012;30(Suppl 5):vii–x. doi: <http://dx.doi.org/10.1016/j.vaccine.2012.07.071> PMID:23199970
28. Agosti JM, Goldie SJ. Introducing HPV vaccine in developing countries – key challenges and issues. *N Engl J Med* 2007;356:1908–10. doi: <http://dx.doi.org/10.1056/NEJMp078053> PMID:17494923