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Bridging the Equity Gap

Women's Cancer Care in Peru



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About this report

“Bridging the Equity Gap: Women’s Cancer Care in Peru” is a research briefing by Economist Impact that examines the landscape of cervical and breast cancer care in Peru, and focuses on identifying disparities and opportunities for delivering equitable outcomes for women.

This briefing explores how socioeconomic, cultural and health system factors contribute to inequities in cancer prevention, diagnosis, treatment, and after-care for women in Peru. With this information, actionable insights are provided for stakeholders, including policymakers, non-governmental organizations (NGOs), healthcare professionals, and advocacy groups in order to promote equitable cancer care.

Economist Impact has conducted an initial evidence review, co-facilitated a workshop with various key stakeholders to understand national-level challenges, and conducted expert interviews to bring a unique perspective to this report. We thank the Peruvian stakeholders who attended the workshop and those who participated in expert interviews and shared their insights and experiences (in alphabetical order):

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Introduction

Breast and cervical cancer are the two most common and deadly cancers affecting women in Peru (see Figure 1). In 2022, breast cancer accounted for 19.9% of incident cancers in women and 1,951 deaths, while cervical cancer accounted for 12.3% of incident cancers and 2,545 deaths with the burden projected to rise further (see Figure 2 and 3).¹ The numbers are alarming, especially for cervical cancer, which is a largely preventable disease through vaccination against the Human papillomavirus (HPV), but Peru continues to have a higher mortality rate than the average of Latin America (LATAM) and the Caribbean.^{2,1} Despite Peru being the first country in South America to introduce the universal school-based HPV vaccination program for girls in 2011, only 74% of eligible females had completed the vaccination schedule in 2023.³ As one expert noted, “Cervical cancer vaccination has progressed more slowly in Peru compared to some other countries,

due to stigma and conservatism.” Peru offers a yearly Pap smear and biennial mammography for women in eligible age groups to screen for cervical and breast cancer, but take-up rate is suboptimal. Only 47.5% of eligible women had undergone a Pap smear in the past three years based on 2023 data, and only 41.7% of eligible women had undergone a mammography in the prior two years, based on data from the 2017–2023 Demographic and Family Health Survey.^{4,5} Low screening uptake due to lack of awareness, stigmatization, fear of a cancer diagnosis, and poor access to care result in delayed diagnoses. Only 30% of women are diagnosed with breast cancer through screening and 50% of women have advanced breast cancer at the time of diagnosis.⁶ Disease biology also contributes to poor outcomes, with aggressive variants like triple-negative breast cancer (TNBC) being more prevalent in Peru compared to other LATAM countries.⁷

Figure 1: Epidemiology of Breast and Cervical Cancer in Peru versus LATAM and the Caribbean (2024)⁸

Rate per 100,000 people

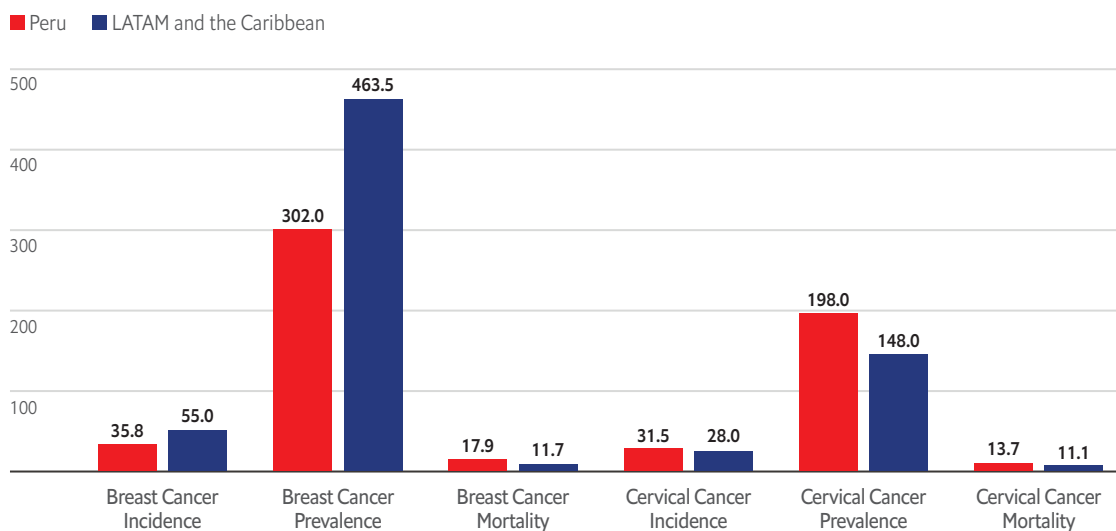


Figure 2: Yearly Projections of Breast and Cervical Cancer Prevalence in Peru and LATAM and the Caribbean through 2030⁸

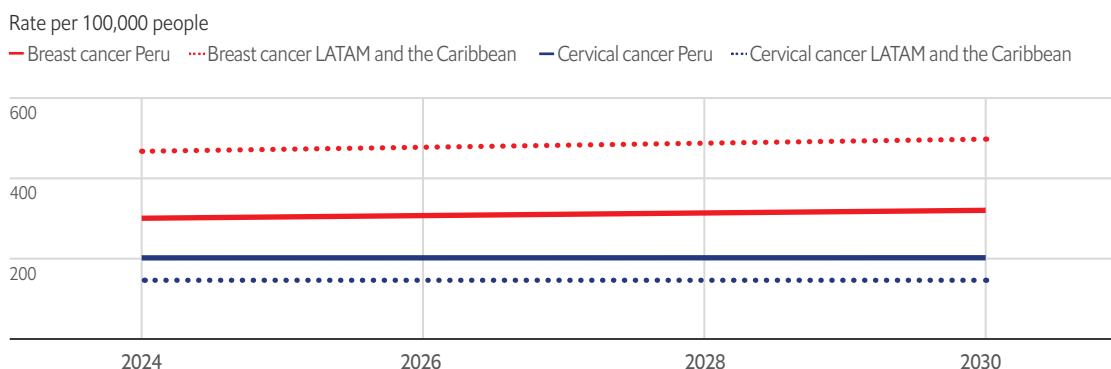
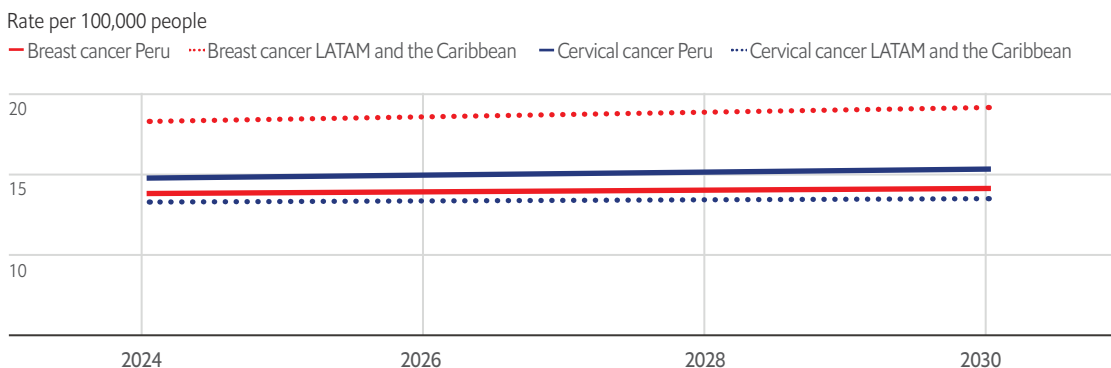


Figure 3: Yearly Projections of Breast and Cervical Cancer Mortality in Peru and LATAM and the Caribbean through 2030.⁸



Furthermore, there are gross inequities in the health outcomes for patients with breast and cervical cancer within Peru (see Figure 4). The western coastal region of Peru is predominantly urban, has greater economic growth, and is inhabited by women with higher education levels and socioeconomic status. However, the central mountainous and eastern rainforest regions are mostly rural and have lagged in development.⁹

Indigenous people, accounting for nearly 25.8% of the population, predominantly reside in the rural mountainous and rainforest regions and have lower education and lower economic status compared to their White and Mestizo (mixed White and Indigenous) counterparts.^{10,9,11} The western region, benefitting from better education, socioeconomic status, and healthcare access, outperforms the central and eastern regions with respect to women’s cancer outcomes. The highest age-standardized death rate for cervical cancer in 2017 was seen in the Loreto in the eastern region (37.4 per 100,000 people) and the lowest rate in Tumbes in the western region (4.8 per 100,000 people). Cervical cancer mortality showed a declining trend in both western and eastern regions between 2008 and 2017, but remained static in the central region.¹² According to experts, “Cervical

Workshop Insights

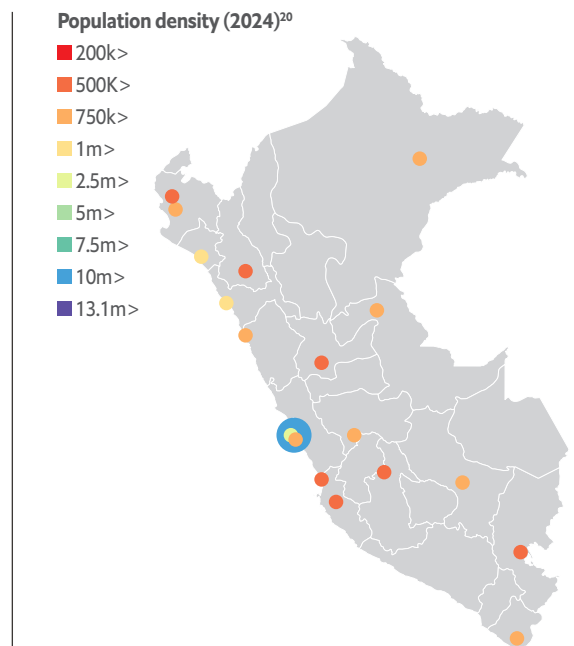
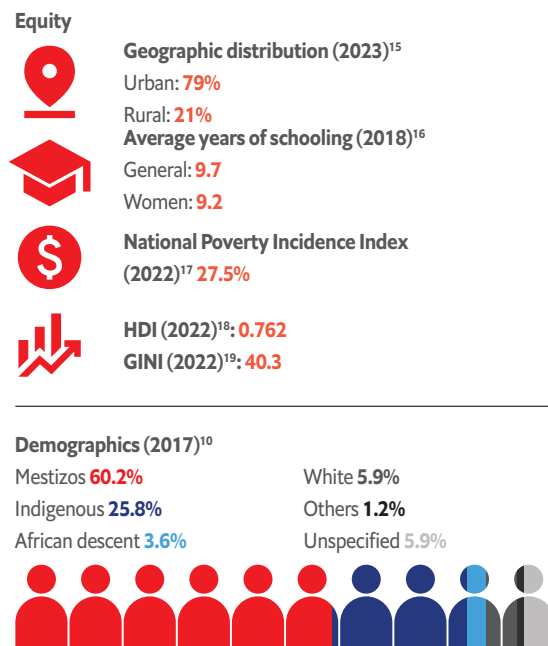
“Cervical cancer disproportionately affects low-income women who rely on public health systems and ‘Sistema Integral de Salud - SIS’ (Comprehensive Health System) coverage, contributing to disparities in outcome.”

cancer disproportionately affects low-income women who rely on public healthcare systems and Sistema Integral de Salud (SIS) [Comprehensive Health System] coverage in Peru, contributing to disparities in outcomes.” As for breast cancer, mortality rates in the central region showed an increasing trend between 2003 and 2017, while the western region has shown a decreasing trend. Indigenous women from the Selva region face additional challenges, as they are more likely to be diagnosed with TNBC, an aggressive subtype, compared to their counterparts in the Sierra region (31% v. 14%).¹³ This disparity in TNBC prevalence among Indigenous populations contributes to the higher mortality risk observed in the Selva region. Palliative care in Peru is lagging. One study attributes the higher prevalence of TNBC in the Selva region to greater geographical and logistical

barriers to care, lower socioeconomic status, and limited healthcare access, despite efforts like the “Plan Esperanza”.¹³ Additionally, differences in environmental exposures and potential genetic predispositions may contribute to this disparity, though further research is needed to confirm these factors.^[13] Furthermore, based on a 2020 survey, Peru had the lowest number of palliative care units in LATAM, and regional disparities are also notable.¹⁴ “Palliative care lacks brigades and budget in various regions, with clear specialist gaps,” experts highlight.

In this briefing, we explore the factors causing disparities in women’s cancer care and outcomes in Peru, the opportunities for bridging these disparities, and specific calls to action for the different stakeholders.

Figure 4: Understanding Equity in Peru



Unraveling the inequities in women's cancer outcomes in Peru

Socio-demographic inequalities, coupled with geographic and healthcare system barriers result in significant disparities in breast and cervical cancer management and outcomes in Peru.

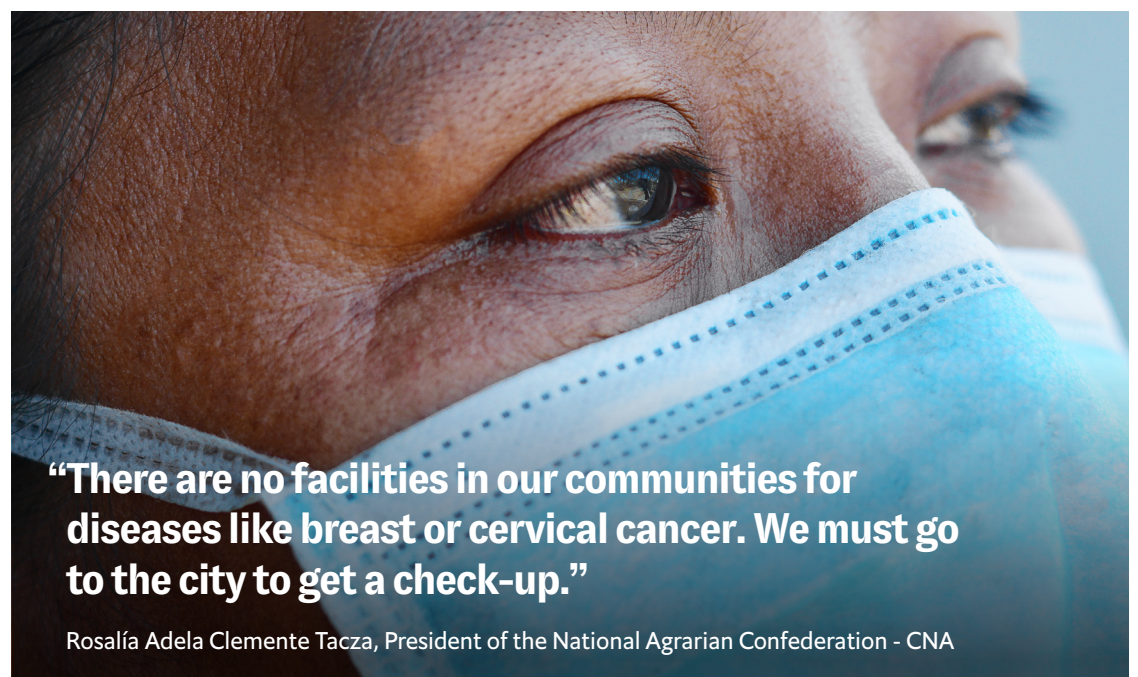
Socio-demographic factors

The inequitable care experienced by women at all stages of the cancer care pathway could be influenced by several socio-demographic factors. "There is a normalization of the absence of human rights for women, distorting their health," experts highlight. While women are already marginalized by the healthcare system, specific characteristics such as lower education, lower income levels, lack of health insurance, Indigenous ethnicity, and rural residence are associated with lower

screening uptake for breast and cervical cancer in Peru.^{21,22,4} Psychosocial and cultural barriers related to embarrassment and fear of the Pap smear test or a cancer diagnosis are further deterrents to screening.^{23,24,25} Stigmatization of cervical cancer due to its relationship with sexually transmitted infections also discourages women from seeking care. Experts highlight that "There's a significant stigma against young women being sexually active, preventing them from accessing preventive measures like HPV vaccines."

Healthcare system characteristics

There are geographical disparities in access to cancer care facilities and the oncology workforce in Peru. The Peruvian Ministry of Health has four



"There are no facilities in our communities for diseases like breast or cervical cancer. We must go to the city to get a check-up."

Rosalía Adela Clemente Tacza, President of the National Agrarian Confederation - CNA

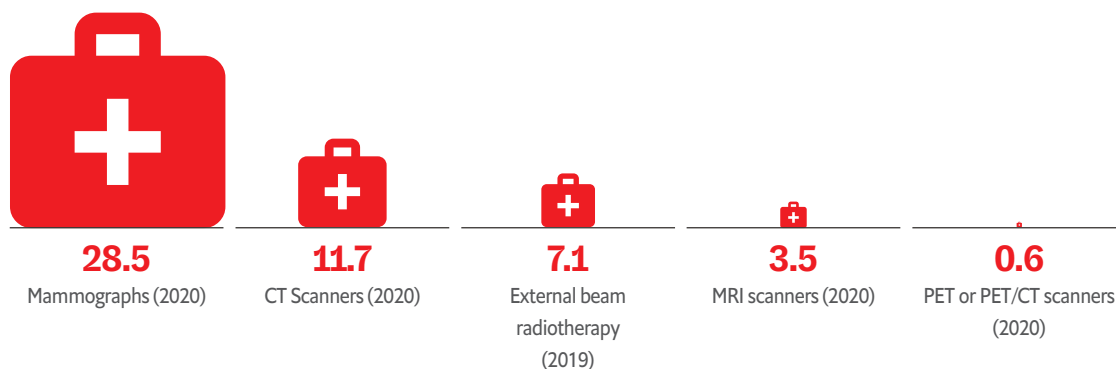


of external beam radiotherapy units (EBRT) at 16 and brachytherapy (BT) units at 17, with the gap projected to increase to 34 and 28 for EBRT and BT units by 2030, respectively.²⁸

General hospitals in some regions may offer basic cancer care, but these centers can also be difficult to access for rural and remote populations. The Loreto region, located in the rainforests, is home to 28 of the 55 Indigenous communities in the country—15.44% of these communities are located over eight hours away from any healthcare facility.²⁹ As highlighted by Rosalía Adela Clemente Tacza, President of La Federación Nacional de Mujeres Campesinas, Artesanas, Indígenas, Nativas y Asalariadas del Perú [National Federation of Peasant, Artisan, Indigenous, Native, and Salaried Women of Peru], “There are no facilities in our communities for diseases like breast or cervical cancer. We must go to the city to get a check-up.” Experts explain that the absence of basic diagnostic tools like mammograms and colposcopes in many regions delays the early detection of women’s cancers (see Figure 5). A survey of 488 women from the three regions of Peru identified that 73.5% of rural women had never received breast cancer screening compared to 36.9% of urban women.⁶ Furthermore, genetic testing for hereditary cancers and molecular testing of biopsy specimens for personalized therapies are not easily accessible in remote and rural areas.³⁰

specialized oncology institutes, the National Cancer Institute in the capital of Lima and three regional institutes in the northern (Trujillo), southern (Arequipa), and central (Huancayo) regions. Currently, there are no specialized oncology centers in the rainforest region.²⁶ There are 11 hospitals providing oncology services in the public sector, but only five centers offer breast cancer surgery, and eight centers offer gynecological oncology surgery.²⁷ There is a significant deficit in radiotherapy units required for the treatment of breast and cervical cancer across the country. Current estimates place the gap

Figure 5: Access to Medical Equipment in Peru³¹
Equipment per 10,000



“Health care must be reimagined with interculturality at its core, including respect for Indigenous identities, languages, and traditions.”

Rosalía Adela Clemente Tacza, President of the National Agrarian Confederation - CNA

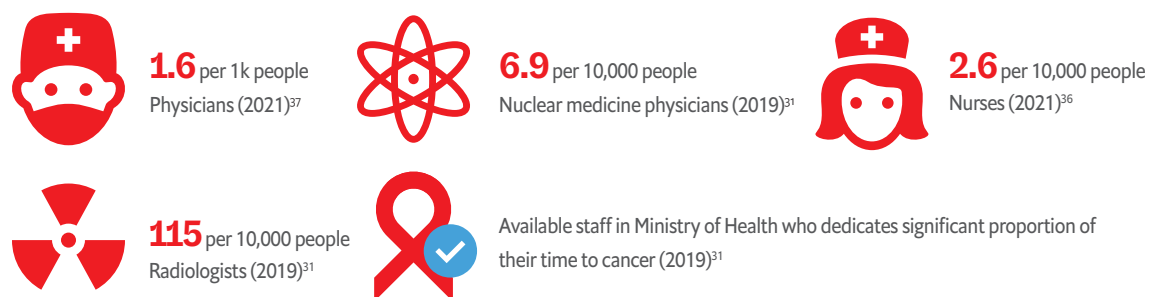
The cost and inconvenience of travel to the city and seeking accommodation are significant barriers to rural, often Indigenous, women seeking cancer care.^{32,33} Often, women need to travel alone, which increases the stress of seeking care in a new environment.³³ Furthermore, the infrastructure and quality of care are variable across cancer centers, which acts as an additional impediment to care seeking. For instance, experts describe that “In Junín, there is only one hospital for cancer, and it’s in poor condition.”²⁶

Access to the cancer workforce is worse in the central and eastern regions as compared with the western region (see Figure 6). Among the 319 oncologists in active practice in 2019, the majority were in the western region—63% were in Lima, 10.03% in Arequipa, 5.64% in Lambayeque, and 5.32% in La Libertad, demonstrating inequities in access to the cancer workforce.³⁴ There are very few training posts for oncologists, and they are inadequate to cover expected future needs. For instance, only six new physicians are being trained in radiation oncology nationwide every year.³⁵ This is a critical issue, as pointed out by Dr López: “There are over 400 medical oncologists in

the country, but more than half are concentrated in the capital. While the population distribution reflects this, rural areas have fewer oncologists and healthcare resources. Additionally, radiotherapy facilities are limited, particularly outside Lima.”

In addition to the shortage of specialists, experts note that the care offered by them is often not tailored to suit the needs of women. Systemic discrimination against women, Indigenous populations, and other marginalized groups significantly exacerbates barriers to diagnosis and treatment. Cultural and linguistic barriers hinder communication between healthcare providers and Indigenous communities, fostering mistrust in health services. As Luis Más López, Executive Director of the Department of Medical Oncology at the Instituto Nacional de Enfermedades Neoplásicas (INEN) [National Institute of Neoplastic Diseases], affirms, “Cultural acceptance of procedures and linguistic barriers are significant issues.” Ms Clemente Tacza reiterates this, saying, “If you’re Quechua-speaking, professionals might not understand you, and there’s no translator.” Women feel that healthcare professionals often lack patience and empathy, dissuading women from returning for ongoing care. Cultural sensitivity and cross-cultural collaboration are also critical to ensure cooperation among those in most need, as pointed out by Ms Clemente Tacza, who explains that “We need policies that include Indigenous practices, where doctors work alongside local healers and midwives, recognizing the value of traditional knowledge... healthcare must be reimagined with interculturality at its core, including respect for Indigenous identities, languages, and traditions.”

Figure 6: Access to Healthcare Workforce in Peru



Healthcare system financing

Healthcare expenditure in Peru is lower than in Latin America and the Caribbean, comprising 33 countries (LAC33) average—5.14% of GDP was spent on healthcare in 2019, 3.26% of which was government spending.^{4,38,39} In addition, regional differences in government funding for cancer care is a key factor contributing to inequitable access. Experts note that administrative regions such as Madre de Dios and Huancavelica receive disproportionately low cancer care budgets as compared with urban areas like Arequipa and La Libertad.

Differences in health insurance coverage also impact access to care. The government provides free health care for the economically vulnerable population through SIS or Public Health Insurance created in 2001. The Essential Health Assurance Plan established a minimum set of entitlements under SIS, including a broad range of about 140

conditions and 1,100 diagnoses with guarantees of timelines and quality. Despite these measures, many women are still unaware that they qualify for SIS or that free screening and treatment for cancer are accessible to them. Other insurances include EsSalud for workers in the formal sector, police and armed forces insurance, and private insurance.⁴⁰ Access to personalized care and innovative cancer treatments depends on the type of health insurance, with SIS offering a narrower range of treatment options, while private insurance provides broader access.³⁴ For instance, molecular testing for hormone receptor status and HER2 status on breast cancer tissue is accessible across SIS, EsSalud, and private insurance but testing for the PD-L1 marker is only available in private. Access to certain novel agents is only available through private insurance.⁴¹ Experts note civil society concerns regarding the lack of systematic data on access to high-cost medications.

Bridging the equity gap

Improve decentralization of cancer care

Plan Esperanza, the comprehensive national cancer control plan launched in Peru in 2012, has improved cancer care access for marginalized and remote populations. Despite the progress that has been achieved, it is necessary to develop new strategies to address the current reality and ongoing challenges. For example, Dr López highlights the need for better collaboration between the Ministry of Health and INEN for appropriate resource allocation and planning.

Plan Esperanza has facilitated the decentralization of cancer services by expanding cancer prevention and treatment centers across Peru. A results-based, budget program (PpR Cancer-024) addresses economic barriers through special

financial provisions for high-cost cancers like breast and cervical cancer through the Solidarity Health Fund (Fondo Intangible Solidario de Salud). Free cancer screening is mandated for breast and cervical cancer.⁴² In response to Plan Esperanza, the imPACT review in 2014 assessed the status of cancer control in Lima, Arequipa, and Huancayo and provided recommendations that have shaped further decentralization of cancer care in the country, including expansion of health promotion, screening, diagnostic and treatment services.⁴² To improve access to screening, experts note that the “Establishment of mammography centers in remote areas like Yurimaguas or Bagua is being evaluated.”

Decentralization of nuclear medicine centers and radiotherapy units outside the capital city of Lima is also underway. Multilateral organizations such



as the International Atomic Energy Agency (IAEA), the World Health Organization (WHO), and the International Agency for Research on Cancer (IARC), as well as external partners such as the MD Anderson Cancer Center and City Cancer Challenge (C/Can) are collaborating with the government of Peru to support these efforts.⁴³

Despite these measures, the healthcare workforce remains unevenly distributed, with professionals in remote areas lacking training in cancer prevention and treatment. Infrastructure for cancer control and management is also inadequate.³⁰ Experts highlight, “The Ministry of Health needs to strengthen its commitment to ensuring that both the public and private healthcare providers in remote areas are aware of and uphold healthcare rights.” Strengthening the cancer care workforce will require better training of rural healthcare professionals in oncology care and offering support and mentorship through leveraging technologies like telemedicine. While the Peruvian Ministry of Health has established targets to increase the number of health workers trained in performing tests like colposcopy and treatments like cryotherapy for cervical lesions, implementation efforts of capacity building are lagging.⁴⁴ Experts

highlight the need for better integration of community health agents in providing oncology care to rural women and establishing public-private partnerships to improve outreach.

Better data would drive better resource allocation in decentralization. Currently, Peru has two population-based cancer registries in Lima and Arequipa, covering approximately 33% of the country’s population. Dr López reaffirms this, saying, “There’s no national electronic health record system or national cancer registry. Some population-based local registries exist in areas like Trujillo, Lima, and Arequipa, but they are limited. Existing registries cover over 30% of the population, which is sufficient for certain decision-making processes. However, a comprehensive national registry would be beneficial for policy planning and resource allocation.”

Experts note that data collection is passive, and platforms are inefficient. Improving data collection requires: 1) expansion of cancer registries for broader population coverage, 2) establishment of better linkages to mandatory cancer reporting and vital statistics systems, and 3) improved funding mechanisms.⁴⁵



Increase government engagement with NGOs to reduce disparities in care

Various NGOs are actively working to reduce disparities in women's cancer care, and government partnerships are improving their outreach. CerviCusco is an NGO in the central region of Peru that works to improve early detection, screening, and treatment of women's cancers in under-served populations. Medical consultations, Pap smears, colposcopy, electrosurgery, breast cancer screening, and laboratory tests are offered by board-certified local and international physicians.⁴⁶ In the past 15 years, the organization has facilitated vaccinating over 25,000 children and adolescents against HPV, performed over 75,000 liquid-based Pap tests, and over 10,000 colposcopy-guided examinations and surgery. Over 2,000 abnormal Pap tests have been reviewed by experts in the United States using telepathology.^[47] CerviCusco previously worked with an organization called RAD-AID to offer breast ultrasounds for screening. Women with abnormalities were referred to the Regional Oncology Center (Centro Oncológico Regional), a satellite national cancer hospital with medical and

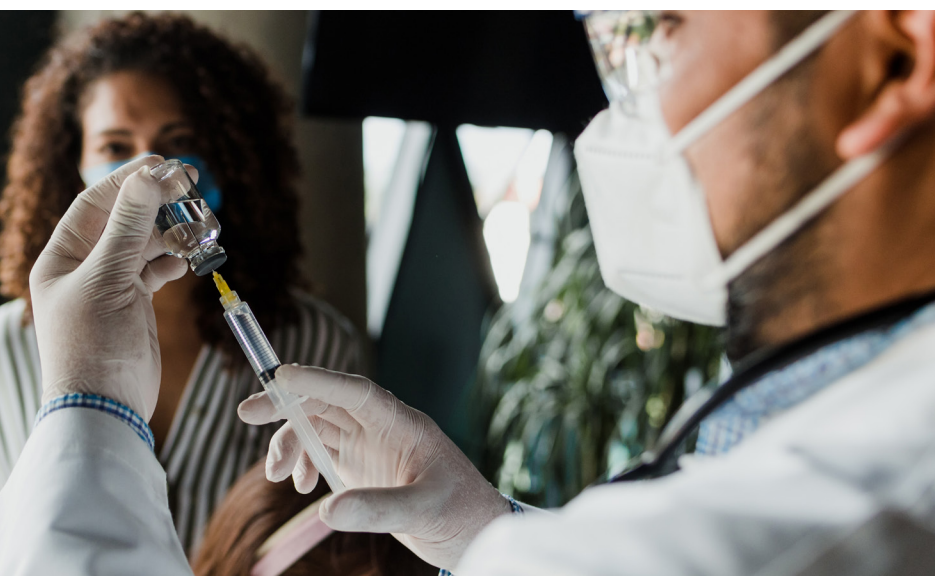
surgical oncology capabilities to offer diagnostic and treatment support.

INEN, the leading national cancer hospital in Peru, provided oversight and telemedicine support for the program. The program offered care to about 220 women, but was suspended in March 2020 due to the pandemic.⁴⁸ The international NGO PATH also previously partnered with Peru's national and regional cancer institutes to offer an early breast cancer detection program for women in the northern region of La Libertad combined with a patient navigation program to support those women screened and found with abnormalities to seek further care.⁴⁹ Resurrection and expansion of such programs will significantly enhance early diagnosis and treatment for marginalized women. The ALMA program, run by the NGO Socios En Salud, is currently active in screening, treatment, and care for breast cancer for women over 40 years of age in the Carabayllo community north of Lima. The program uses flyers and canvassing, but also leverages technology through chatbots to support women in screening for breast cancer.⁵⁰

Offering financial support to women traveling to seek cancer care is crucial. The Peruvian Cancer Foundation (Fundación Peruana de Cáncer) is an NGO that supports the travel of low-income patients from different parts of Peru to INEN for cancer care by providing them free accommodation.⁵¹ Government partnerships to improve support for travel and accommodation can facilitate care-seeking and compliance among women.

Adopt a women-centric, intercultural approach to cancer care

Empowering women through education, awareness, and self-care is key to improving women's cancer outcomes. The government is making some efforts in this direction, for example, by adopting awareness campaigns, including "Pink October for Breast Cancer". Cyclical increases in Google search volumes





“Healthcare must be reimagined with interculturality at its core, including respect for indigenous identities, languages, and traditions.”

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about breast cancer have been noted around the time of the Pink October campaign.⁵² Increasing culturally sensitive educational videos is another promising intervention to improve awareness among marginalized women.⁵³ However, these digital strategies do not reach large swathes of the population in rural and under-developed areas. Women in these communities demonstrate a preference for counseling and education through community health volunteers—so greater efforts are needed in their engagement with women’s cancer care.⁵⁴ Peer support from other women with cancer can also be effectively leveraged to improve awareness.⁵⁵

Better women-centric care can be achieved through better training of healthcare professionals and the promotion of intercultural care. INEN provides computer-based programs that train healthcare professionals in patient-centric care to reduce social, educational, and cultural barriers, and thereby improve compliance with cancer treatment.⁴² Still, Indigenous women are

marginalized, and there is a poor understanding of their expectations of healthcare.

Embracing care delivery innovations like self-testing for HPV for cervical cancer screening can reduce logistical challenges and embarrassment around screening, thereby improving uptake among women.⁵⁶ The Hope project in Peru is a social enterprise that offers HPV self-sampling kits at a commercial price to women of higher socioeconomic status and uses the profits to offer the same test at a subsidized cost for women from socioeconomically disadvantaged communities. Collecting more data on the cost-effectiveness of this program can facilitate more widespread implementation.⁵⁷

As experts highlight, “In Peru, resources are not lacking, but the ability to envision ambitious goals to create new and better advances is.” Through better resource allocation, decentralization, collaboration, and a women-centric, intercultural care approaches, more equitable outcomes can be achieved in women’s cancer care.

References

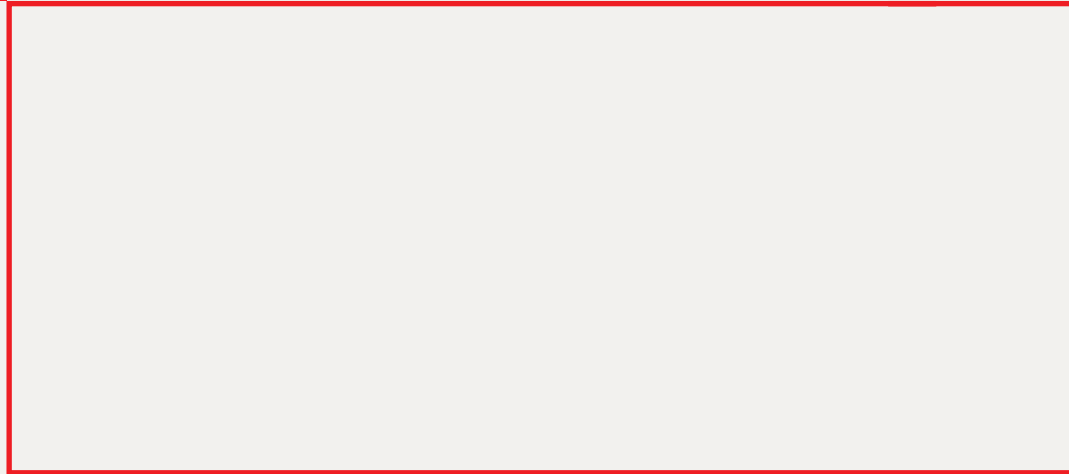
- ¹ IARC, WHO. Global Cancer Observatory: Cancer Today – Peru. [Internet]. Lyon: International Agency for Research on Cancer, Geneva: World Health Organization; 2024. Available from: <https://gco.iarc.who.int/media/globocan/factsheets/populations/604-peru-fact-sheet.pdf>.
- ² IARC, WHO. Global Cancer Observatory: Cancer Today – Latin America and the Caribbean. [Internet]. Lyon: International Agency for Research on Cancer, Geneva: World Health Organization; 2024. Available from: <https://gco.iarc.who.int/media/globocan/factsheets/populations/604-peru-fact-sheet.pdf>.
- ³ WHO. Human Papillomavirus (HPV) vaccination coverage. [Internet]. Geneva: World Health Organization; [Last updated 2024]. Available from: [https://immunizationdata.who.int/global/wiise-detail-page/human-papillomavirus-\(hvp\)-vaccination-coverage](https://immunizationdata.who.int/global/wiise-detail-page/human-papillomavirus-(hvp)-vaccination-coverage).
- ⁴ Intimayta-Escalante C. Ethnic inequalities in coverage and use of women's cancer screening in Peru. *BMC Womens Health*. 2024;24(1):418. doi: 10.1186/s12905-024-03225-6.
- ⁵ INEI. Perú: Enfermedades No Transmisibles y Transmisibles. [Internet]. Lima: Instituto Nacional de Estadística e Informática; 2024. Available from: https://www.inei.gob.pe/media/MenuRecursivo/publicaciones_digitales/Est/Lib1951/libro.pdf.
- ⁶ Araujo JM, Gómez AC, Jongh WZ, Ausejo J, Córdova I, Schwarz LJ, Bretel D, Fajardo W, Saravia-Huarca LG, Barboza-Meca J, Morante Z, Guillén JR, Gómez H, Cárdenas NK, Hernández L, Melo W, Villarreal-Garza C, Caglevic C, Palacio C, García H, Mejía G, Flores C, Vallejos C, Pinto JA. A nationwide pilot study on breast cancer screening in Peru. *Ecanermedicalsience*. 2023;17:1494. doi: 10.3332/ecancer.2023.1494.
- ⁷ Tiscoski KA, Giacomazzi J, Rocha MS, Gössling G, Werutsky G. Real-world data on triple-negative breast cancer in Latin America and the Caribbean. *Ecanermedicalsience*. 2023;17:1635. doi: 10.3332/ecancer.2023.1635.
- ⁸ IHME. GBD Compare. [Internet]. Seattle [WA]: Institute for Health Metrics and Evaluation, University of Washington; 2024. Available from: <https://vizhub.healthdata.org/gbd-compare/>.
- ⁹ OECD. Monitoring health system performance in Peru: data and statistics. [Internet]. Paris: The Organization for Economic Cooperation and Development; 2017. Available from: <http://dx.doi.org/10.1787/9789264282988-en>.
- ¹⁰ CIA. The World Factbook: Peru. [Internet]. Langley [VA]: Central Intelligence Agency; [Last updated 2 January 2025]. Available from: <https://www.cia.gov/the-world-factbook/countries/peru/>.
- ¹¹ Minority Rights Group International. World Directory of Minorities and Indigenous Peoples – Peru. [Internet]. London: Minority Rights Group International; 2007. Available from: <https://www.refworld.org/docid/4954ce0b2.html>.
- ¹² Torres-Roman JS, Ronceros-Cardenas L, Valcarcel B, Arce-Huamani MA, Bazalar-Palacios J, Ybaseta-Medina J, La Vecchia C, Alvarez CS. Cervical cancer mortality in Peru: regional trend analysis from 2008-2017. *BMC Public Health*. 2021;21(1):219. doi: 10.1186/s12889-021-10274-1.
- ¹³ Tamayo LI, Vidaurre T, Navarro Vásquez J, Casavilca S, Aramburu Palomino JI, Calderon M, Abugattas JE, Gomez HL, Castaneda CA, Song S, Cherry D, Rauscher GH, Fejerman L. Breast cancer subtype and survival among Indigenous American women in Peru. *PLoS One*. 2018;13(9):e0201287. doi: 10.1371/journal.pone.0201287.
- ¹⁴ Pastrana T, de Lima L, Sánchez-Cárdenas M, et al. Atlas de cuidados paliativos de Latinoamérica 2020. 2nd ed. Houston [TX]: IAHC Press; 2021.
- ¹⁵ World Bank Group. Urban population (% of total population) – Peru. [Internet]. Washington [DC]: World Bank Group; [Last updated 2024]. Available from: <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=PE>.
- ¹⁶ UIS. Data by theme. [Internet]. Montreal: UNESCO Institute for Statistics; [Last updated 2024]. Available from: <https://data.uis.unesco.org/index.aspx?queryid=3847>.
- ¹⁷ World Bank Group. Poverty headcount ratio at national poverty lines (% of population) – Peru. [Internet]. Washington [DC]: World Bank Group; [Last updated 2023]. Available from: <https://data.worldbank.org/indicator/SI.POV.NAHC?locations=PE>.
- ¹⁸ World Bank Group. Gini index – Peru. [Internet]. Washington [DC]: World Bank Group; [Last updated 2023]. Available from: <https://data.worldbank.org/indicator/SI.POV.GINI?locations=PE>.
- ¹⁹ UNDP. Human Development Reports: Peru. [Internet]. New York [NY]: United Nations Development Programme; [Last updated 13 March 2024]. Available from: <https://hdr.undp.org/data-center/country-insights#/ranks>.
- ²⁰ World Population Review. Peru Population 2024 (Live). [Internet]. Walnut [CA]: World Population Review; [Last updated 2024]. Available from: <https://worldpopulationreview.com/countries/peru>.
- ²¹ Becerra-Canales B, Campos M, Atuncar-Deza S, Cáceres-Yparraguirre H. Prevalence and factors associated with cervical cancer preventive screening in a Peruvian region. *Medwave*. 2023;23(8). English, Spanish. doi: 10.5867/medwave.2023.08.2709.
- ²² Barrenechea-Pulache A, Avila-Jove E, Hernández-Vásquez A, Runzer-Colmenares FM. Socio-demographic inequalities in the uptake of Papanicolaou tests in Peru: analysis of the 2015-2017 Demographic and Family Health Survey. *Epidemiol Health*. 2020;42:e2020043. doi: 10.4178/epih.e2020043.

- ²³ Luque JS, Opoku S, Ferris DG, Guevara Condorhuan WS. Social network characteristics and cervical cancer screening among Quechua women in Andean Peru. *BMC Public Health*. 2016 Feb 24;16:181. doi: 10.1186/s12889-016-2878-3.
- ²⁴ Olaza-Maguiña AF, De la Cruz-Ramírez YM. Barriers to the non-acceptance of cervical cancer screenings (pap smear test) in women of childbearing age in a rural area of Peru. *Ecancermedicalscience*. 2019;13:901. doi: 10.3332/ecancer.2019.901.
- ²⁵ Pieters MM, Proeschold-Bell RJ, Coffey E, Huchko MJ, Vasudevan L. Knowledge, attitudes, and practices regarding cervical cancer screening among women in metropolitan Lima, Peru: a cross-sectional study. *BMC Womens Health*. 2021;21(1):304. doi: 10.1186/s12905-021-01431-0.
- ²⁶ Astigueta-Pérez J, Abad-Licham M, Chávez-Chirinos C, Beraun-Milla L, Lachos-Dávila A, Díaz-Pérez E, Portugal-Valdivia K, Castañeda PP, Alférez IP, Mezones-Holguín E. Cancer disease progression and death during the COVID-19 pandemic: a multidisciplinary analysis for the Peruvian setting. *Ecancermedicalscience*. 2020;14:1098. doi: 10.3332/ecancer.2020.1098.
- ²⁷ Ministerio de Salud del Perú. Plan Nacional de cuidados integrales del Cáncer (2020 – 2024). [Internet]. Lima: Ministerio de Salud del Perú; 2021. Available from: <https://bvs.minsa.gob.pe/local/MINSA/5341.pdf>.
- ²⁸ Sarria GR, Martínez DA, Li B, Castillo RD, Salgado A, Pinillos L, Felix A, Bobadilla I, Ferraris G, Castilho M, Carmona J, Leon B, Aviles L, Ricagni L, Isa N, Flores C, Giordano FA, Zubizarreta EH, Polo A, Sarria GJ. Leveling up the access to radiation therapy in Latin America: economic analysis of investment, equity, and inclusion opportunities up to 2030. *Int J Radiat Oncol Biol Phys*. 2023;116(2):448-458. doi:10.1016/j.ijrobp.2022.12.012.
- ²⁹ Hernández-Vásquez A, Bendezu-Quispe G, Turpo Cayo EY. Indigenous communities of Peru: Level of accessibility to health facilities. *J Taibah Univ Med Sci*. 2022;17(5):810-817. doi: 10.1016/j.jtumed.2022.02.006.
- ³⁰ Solís N, Zavaleta E, Wernhoff P, Dominguez-Barrera C, Dominguez-Valentin M. Challenges to bringing personalized medicine to a low-resource setting in Peru. *Int J Environ Res Public Health*. 2021;18(4):1470. doi: 10.3390/ijerph18041470.
- ³¹ WHO. Cancer country profile 2020: Peru. [Internet]. Geneva: World Health Organization; 2021. Available from: https://cdn.who.int/media/docs/default-source/country-profiles/cancer/per-2020.pdf?sfvrsn=7b13a0f5_2&download=true.
- ³² Burki T. Peru advances towards universal health care for patients with cancer. *Lancet Oncol*. 2024 Sep;25(9):e402. doi: 10.1016/S1470-2045(24)00445-5.
- ³³ Nevin PE, García PJ, Blas MM, Rao D, Molina Y. Inequities in cervical cancer care in indigenous Peruvian women. *Lancet Glob Health*. 2019;7(5):e556-e557. doi: 10.1016/S2214-109X(19)30044-0.
- ³⁴ Valencia-Mesías G, Rioja-Viera P, Morante-Cruz Z, Toledo-Morote Y, Neciosup-Delgado S, Gómez-Moreno H. The current situation regarding the availability and accessibility of anticancer drugs for breast cancer in the Peruvian public health systems. *Ecancermedicalscience*. 2021;15:1224. doi: 10.3332/ecancer.2021.1224.
- ³⁵ Li B, Faúndez Salazar J, Rivera AF, Babayemi T, Colqui Campos K, Del Castillo Pacora RF, Noreña Gómez MP, Gamboa Garay OA, Vacaflore Romero L, Rodríguez Moura D, Condori Vasquez N, Martínez Pérez DA. Radiation oncology residency training in Latin America: a call to attention. *Adv Radiat Oncol*. 2022;7(3):100898. doi: 10.1016/j.adro.2022.100898.
- ³⁶ World Bank Group. Nurses and midwives (per 1,000 people) – Peru. [Internet]. Washington [DC]: World Bank Group; [Last updated 2022]. Available from: <https://data.worldbank.org/indicator/SH.MED.NUMW.P3?locations=PE>.
- ³⁷ World Bank Group. Physicians per 1,000 people – Peru. [Internet]. Washington [DC]: World Bank Group; [Last updated 2022]. Available from: <https://data.worldbank.org/indicator/SH.MED.PHYS.ZS?locations=PE>.
- ³⁸ World Bank Group. Domestic general government health expenditure (% of GDP). [Internet]. Washington [DC]: World Bank Group; [Last updated 15 April 2024]. Available from: <https://data.worldbank.org/indicator/SH.XPD.GHED.GD.ZS>.
- ³⁹ OECD, The World Bank. Health at a glance: Latin America and the Caribbean 2023. Paris: OECD Publishing; 2023. Available from: <https://doi.org/10.1787/532b0e2d-en>.
- ⁴⁰ Dale E, Prieto L, Seinfeld J, Pescetto C, Barroy H, Montañez V, Cid C. Budgeting for results in health: key features, achievements and challenges in Peru. Geneva: World Health Organization; 2020. Available from: <https://iris.who.int/bitstream/handle/10665/333887/9789240004436-eng.pdf>.
- ⁴¹ Valencia F, Gómez HL, Neciosup SP, Limón R, Torrico MDC, Morillas L, Torres R, Sánchez C, Araya I, Gómez R, Bruges R, Vargas C, Soria T, Muñoz R, Riofrío M, Gálvez M, Ruiz R, Benites P, Cardoso F. Advanced breast cancer guidelines in Latin America: assessment, adaptation, and implementation of fifth advanced breast cancer consensus guidelines. *JCO Glob Oncol*. 2024;10:e2200067. doi: 10.1200/GO.22.00067.
- ⁴² Vidaurre T, Santos C, Gómez H, Sarria G, Amorin E, López M, Regalado R, Manrique J, Tarco D, Ayestas C, Calderón M, Mas L, Neciosup S, Salazar M, Chávez JC, Ubillus M, Limache A, Ubillus JC, Navarro J, Sarwal K, Sutcliffe S, Gutiérrez-Aguado A, Silva M, Mena A, Guillén ME, Castañeda C, Abugattas J. The implementation of the Plan Esperanza and response to the imPACT Review. *Lancet Oncol*. 2017;18(10):e595-e606. doi: 10.1016/S1470-2045(17)30598-3.
- ⁴³ Swabey-Van de Borne E, Saporiti G. Peru takes steps towards its goal of Universal Health Care for cancer patients. Vienna: International Atomic Energy Agency; [Last updated 29 July 2024]. Available from: <https://www.iaea.org/newscenter/news/peru-takes-steps-towards-its-goal-of-universal-health-care-for-cancer-patients#:~:text=Peru%20is%20advancing%20towards%20its,team%20of%20national%20and%20international>.
- ⁴⁴ Thoumi A, Bond SJ, Dotson ME, Krieger M, García PJ, Ramanujam N. Policy considerations to promote equitable cervical cancer screening and treatment in Peru. *Ann Glob Health*. 2021;87(1):116. doi: 10.5334/aogh.3442.
- ⁴⁵ Piñeros M, Ramos W, Antoni S, Abriata G, Medina LE, Miranda JJ, Payet E, Bray F. Cancer patterns, trends, and transitions in Peru: a regional perspective. *Lancet Oncol*. 2017;18(10):e573-e586. doi: 10.1016/S1470-2045(17)30377-7.
- ⁴⁶ CerviCusco. Homepage. [Internet]. Cusco: CerviCusco; n.d. Available from: <https://cervicusco.org/>.

- ⁴⁷ Cervicusco. Patient impact. [Internet]. Cusco: CerviCusco; n.d. Available from: <https://cervicusco.org/impact/>.
- ⁴⁸ Matsumoto MM, Widemon S, Farfán G, Vidaurre T, Dunstan J, Krotish DE, Ferris DG, García Santos JM, Mollura DJ, Pollack E, Scheel JR. Earlier Breast Cancer Detection in Peru: Establishing a Comprehensive Program in an Underserved Region. *J Am Coll Radiol*. 2020;17(11):1520-1524. doi: 10.1016/j.jacr.2020.06.003.
- ⁴⁹ PATH. Community-based program for breast health, Peru. [Internet]. Seattle [WA]: PATH; 2016. Available from: https://media.path.org/documents/Breast_Program_Peru_Factsheet_Sept_2016_FINAL.pdf?_gl=1*159ugbi*_gcl_au*NjY4ODIyMDUuMTcyOTE4NzUzOA..*_ga*Nzg3Mzc5Njc4LjE3MjkxODc1Mzk*_ga_YBSE7ZKQDM*MTcyOTE4NzUzOC4xLjAuMTcyOTE4NzU0NS41My4wLjA.
- ⁵⁰ PIH. Delivering breast cancer care in Peru. [Internet]. Boston [MA]: Partners in Health; [Last updated 3 February 2021]. Available from: <https://www.pih.org/article/delivering-breast-cancer-care-peru>.
- ⁵¹ UICC. Fundación Peruana de Cáncer [Peruvian Cancer Foundation]. [Internet]. Geneva: Union for International Cancer Control; n.d. Available from: <https://www.uicc.org/membership/fundacion-peruana-de-cancer>.
- ⁵² Luna-Abanto J, Gamarra L, Armestar DD, Condori BH, Tisoc GBM, Trujillo GF, Apumayta E, Tairo-Cerrón T, Centurión-Rodríguez C, Ruiz LG, Espinoza-Figueroa J, García KTM, Yovera JN, Trujillo MU, Sarria G. Impact of cancer awareness campaigns in Peru: a 5-year Google Trends analysis. *Ecancermedicalscience*. 2022;16:1477. doi: 10.3332/ecancer.2022.1477.
- ⁵³ Ferris DG, Condorhuman WS, Waller J, Lilienthal A. Impact of a video intervention for rural Peruvian women with cervical neoplasia before loop excisional procedures. *J Low Genit Tract Dis*. 2015 Jul;19(3):224-8. doi: 10.1097/LGT.000000000000107.
- ⁵⁴ Vasudevan L, Stinnett S, Mizelle C, Melgar K, Makarushka C, Pieters M, Sanchez LER, Jeronimo J, Huchko MJ, Proeschold-Bell RJ. Barriers to the uptake of cervical cancer services and attitudes towards adopting new interventions in Peru. *Prev Med Rep*. 2020;20:101212. doi: 10.1016/j.pmedr.2020.101212.
- ⁵⁵ Fields BC, Morse RM, Ortega E, Waterfield K, Prieto BA, Oberhelman R, Paz-Soldán VA. "I wanted information": navigating breast Cancer and its treatment in Lima, Peru. *BMC Womens Health*. 2023;23(1):230. doi: 10.1186/s12905-023-02321-3.
- ⁵⁶ Morán F, Cárcamo C, Valderrama M, García PJ. Preferencias y satisfacción hacia un programa de tamizaje con pruebas autoadministradas de detección del virus de papiloma humano [Preferences and satisfaction towards a screening program with self-administered human papilloma virus detection tests]. *Rev Peru Med Exp Salud Publica*. 2017;34(2):228-232. Spanish. doi: 10.17843/rpmesp.2017.342.2453.
- ⁵⁷ Shin MB, Garcia PJ, Saldarriaga EM, Fiestas JL, Ásbjörnsdóttir KH, Iribarren SJ, Barnabas RV, Gimbel S. Cost of community-based human papillomavirus self-sampling in Peru: A micro-costing study. *Lancet Reg Health Am*. 2022;8:100160. doi: 10.1016/j.lana.2021.100160.

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