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# **Impact and opportunity: the case for investing in women's cancers in Asia Pacific**



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# About the report

*“Impact and opportunity: the case for investing in women’s cancers in Asia Pacific”* is a report by Economist Impact, commissioned by the APAC Women’s Cancer Coalition and supported by Roche. In this report, the burden of women’s cancer (specifically breast and cervical cancer) is examined in six countries in the Asia Pacific (APAC) region: India, Indonesia, Malaysia, the Philippines, Thailand and Vietnam. The research examines the current disease burden and the quality of policies and programmes to tackle cancer based on recommendations set by the World Health Organisation (WHO). The research identifies gaps and opportunities for improvement.

The report seeks to improve outcomes for people living with breast and cervical cancer across the APAC region and foster greater prevention in the case of cervical cancer. The research uses a benchmarking scorecard allowing stakeholders to assess performance compared to their peers and prioritise key steps to improve.

Economist Impact conducted an evidence review, convened an advisory board, and interviewed experts to inform the design of the scorecard. We would like to thank the following experts who contributed to the research:

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# Executive Summary

Against a backdrop of rising cancer incidence worldwide, cancers affecting women are becoming more common and impactful. Women are impacted differently than men across many different cancers, with distinct gender-related risk factors which impact incidence, care, and mortality. Female breast cancer surpassed lung cancer as the most frequent newly diagnosed cancer worldwide in 2020, and the incidence and mortality of cervical cancer, the second most common cancer affecting women, is rising.<sup>1</sup>

Both diseases are increasing in incidence in the Asia Pacific (APAC) region as a demographic transition from lower to higher income status is accompanied by rising cases and mortality. Breast cancer incidence is expected to rise by 20.9% in Asia between 2020 and 2030 and mortality to increase by 27.8%. Both exceed the anticipated global rates.<sup>2</sup> It is important to note that these projections were made by the Global Cancer Observatory without taking into account changes to intervention programmes such as screening.

Women in the region are already more heavily affected by cervical cancer due to factors including inadequate or inaccessible screening and vaccination programmes and socioeconomic causes including stigma and lack of awareness. Cases and mortality are set to rise as a consequence of ageing

populations, both surpassing the global increase; cervical cancer incidence by 18.9% over 2020 to 2030 and mortality by 24.9%.<sup>2</sup>

To help countries to tackle these two diseases, the World Health Organisation (WHO) has devised strategies focused on each: the WHO's Global Strategy for Cervical Cancer Elimination which sets a 2030 target for reaching goals related to vaccination, screening and treatment, and the WHO's Global Breast Cancer Initiative which targets a sustained decrease in breast cancer mortality of 2.5% per year by 2040.<sup>3,4</sup>

Against this backdrop, Economist Impact, commissioned by the APAC Women's Cancer Coalition and supported by Roche, has analysed cancer policies and programmes in six countries in the APAC region—India, Indonesia, Malaysia, the Philippines, Thailand and Vietnam. These countries, which are either lower middle- or upper middle-income, are braced for a rise in breast and cervical cancer incidence and mortality that match or exceed anticipated regional and global averages. To meet the WHO breast and cervical cancer targets, they need to seize on multiple opportunities for progress in the coming years. Based on a scoring system informed by a literature review and assessment by a panel of experts, Economist Impact assesses their progress in tackling breast and cervical cancer across five domains.

This study found large variations in prevention (for cervical cancer) and screening (for both breast and cervical cancer), including an inconsistent adoption of both organised, population-based national-level immunisation and screening, and gold-standard approaches such as human papillomavirus (HPV) DNA testing (for cervical cancer) and in some cases mammography (for breast cancer).

## Often, both diseases are diagnosed too late, leading to direct and indirect healthcare costs

Often, both diseases are diagnosed too late, leading to direct and indirect healthcare costs related to factors like productivity and socioeconomic impact. As a result, the costs faced by economies are large, and many individuals and families—especially in countries where public health financing is scant—are faced with significant out of pocket costs, resulting in catastrophic health expenditure.

To help countries reverse the trend and achieve the WHO cervical cancer and breast cancer targets, we have identified several key steps:

### **1. Countries must demonstrate greater political will and leadership, and implement and update national elimination plans and strategies to align with WHO targets for cervical and breast cancer**

Women's cancers should be prioritized, with national elimination plans for cervical cancer and strategic plans for breast cancer designed and aligned with WHO guidance. For cervical cancer, countries should establish fully costed and funded WHO-aligned national elimination plans with performance-tracking metrics. These should be resourced and operationalised, for example through establishment of a steering committee or technical working group.

### **2. Enhance performance tracking by building immunisation, screening and patient outcome registries for cervical and breast cancer**

Currently there are few efficient ways to track the performance of implemented policies and programmes. Countries should develop key performance indicators (KPIs) aligned to cervical cancer elimination targets and breast cancer strategies, and mechanisms to measure performance and track patient outcomes over time. Immunisation, screening, and patient outcome registries are vital aids that track the success of prevention and treatment efforts and support research, planning and evaluation.

### **3. Focus on primary prevention by rolling out national immunisation programmes (HPV immunisation for cervical cancer) and secondary prevention by rolling out organised population-based national screening programmes (for both cervical and breast cancer)**

Countries should build on progress already made in HPV immunisation programmes by expanding coverage, including across urban/rural and socioeconomic divides, and ensuring high uptake. For cervical cancer screening, organised, population-based HPV DNA testing has demonstrated superiority over both conventional cytology and visual inspection under acetic acid (VIA) testing in reducing incidence and should be encouraged, along with the introduction of self-screening. For breast cancer, organised population-based mammography screening programmes have been shown to reduce mortality, and though not suggested in countries with weaker health systems, this type of screening should be considered for high-risk populations. Awareness, education and advocacy are an important step, and key to building and sustaining effective prevention and screening programmes.



#### **4. Referral and treatment pathways for patients should be clear and well defined**

Once a diagnosis is made, guidance on the processes of referral and linkage to care and treatment services should be well defined, timely, and organised. Roles and responsibilities, tools for referral, and navigation should be clearly outlined to ensure early access and appropriate support, increase trust and improve outcomes.

#### **5. Governments should prioritise women's cancers as key policy areas to achieve national targets for immunisation, screening and treatment**

Increasing fiscal space for women's cancers can have a significant impact on policy prioritisation and the ability of governments to achieve their targets. Including services in prevention, screening and treatment under Universal Health Care (UHC) packages and local budgets could help ensure these are tailored to the population, long-term, and sustainable.

#### **6. Governments and global funding bodies should devise and implement effective and sustainable funding models**

Given limited spending on breast and cervical cancer in these nations, governments should consider new funding models, including catalytic grants and multilateral agency loans working with key stakeholders such as funding organisations, foundations, development agencies and multilateral banks (including the WHO, World Bank, Unitaid, and PEPFAR). Catalytic funding, impact investing, dedicated cancer funds and innovative payment models can help deliver sustainable programmes.

#### **7. Services and programmes should be patient-centric and tailored to needs of affected populations in different settings**

The APAC region is diverse in terms of population and geographical settings, whether urban, rural, or remote. When resources are limited, countries should take a holistic approach to targeting and implementing programmes, sensitive to the contexts in which they must operate. For example, centralised screening, immunisation and treatment will be most effective in urban and peri-urban settings, and will bring scale to national screening ambitions and accelerate the march towards national targets. Decentralised approaches however could be more appropriate in rural and remote areas.

### **8. Consider integrated, holistic approaches to tackle resource and capacity challenges**

While prevention and screening are important first steps, it is also critical to ensure countries have the capacity to diagnose and treat patients. Due to shortfalls in infrastructure and funding, workforce and technical capacity are both limited in the region. Integrated approaches—such as combining HIV and cervical cancer programmes, including female cancer services into existing family planning programmes, or conducting simple breast examinations alongside other healthcare interactions—can relieve shortages of time, capacity and workforce.

Achieving the WHO targets for breast cancer and the elimination of cervical cancer requires the development of robust national cancer control programmes, appropriate implementation, adoption of state-of-the-art recommendations into national clinical guidelines for screening, diagnosis and treatment, and the expansion of registries to cover larger swathes of the population to accurately assess diagnosis and treatment outcomes. National immunisation and organised population-based national screening programmes must be a central tenet of national cancer control programmes, as should sustainable, long-term resource allocation and funding, including the appropriate allocation of government funding and support from catalytic external funding. Patient organizations are key to improving awareness and advocacy. With these measures in place, the emerging economies of APAC will be better positioned to tackle the growing burden of breast and cervical cancer.



# Introduction

The burden of cancer is increasing worldwide, including an increasing proportion of cancers affecting women. Women are impacted differently than men across many different cancers, with distinct gender-related risk factors which impact incidence, care, and mortality. Female breast cancer surpassed lung cancer as the most common newly diagnosed cancer worldwide in 2020.<sup>1</sup> About 9m new cases of cancer occurred in women in 2020, with cancers of the female reproductive tract (cervical, uterine and ovarian cancer) and breast cancer accounting for a combined 38.9% of cases.<sup>5</sup> Of these, breast cancer (24.5% of new cases in 2020) and cervical cancer (6.5% of new cases) are the most common.<sup>5</sup>

## **Female breast cancer surpassed lung cancer as the most common newly diagnosed cancer worldwide in 2020.<sup>1</sup>**

This report focuses on the large and rising burden of breast and cervical cancer in six countries in the Asia Pacific (APAC) region, where the burden of both cancers is significant and growing. The World Health Organisation (WHO) has set a global strategy to help eliminate cervical cancer as a public health threat (including goals that should be reached by 2030), and for a steady reduction in breast cancer deaths with the aim of saving 2.5m lives over 20 years.

As well as assessing the current and future trends of breast and cervical cancer in the region, the report assesses solutions that align with major WHO targets for both diseases.

### **Breast cancer and cervical cancer are significant—and rising—threats to women in Asia**

About 2.3m cases of breast cancer were diagnosed globally in 2020, with almost half in Asia (45%).<sup>6</sup> In terms of the proportion of new cases among women, breast cancer is the most common cancer in Malaysia (32.9%), the Philippines (31.4%), Indonesia (30.8%), India (26.3%), Vietnam (25.8%), and Thailand (22.8%).<sup>5</sup>

The global burden of cervical cancer is heavily weighted towards Asia, with 58% of all cases arising on the continent in 2020.<sup>6</sup> It was the second most common cancer in women in India (18.3%), Indonesia (17.2%) and the Philippines (9.1%), the third most common in Thailand (9.4%), the fourth most common in Malaysia (6.8%), and the seventh most common in Vietnam (2.3%).<sup>5</sup> The region also has the world's highest death rate from cervical cancer, with more than 58% of all deaths related to cervical cancer.<sup>7</sup>

**Table 1: Global cancer cases, females, all ages<sup>5,8</sup>**

Cancer	New global cases in 2020	New Asia cases in 2020	% of new global cases in 2020	% of new Asia cases in 2020
Breast	2,261,419	1,026,171	24.5	22.9
Colorectal	865,630	432,646	9.4	9.7
Lung	770,828	423,238	8.4	9.4
Cervical	604,127	351,720	6.5	7.8
Thyroid	448,915	265,542	4.9	5.9

The burden of both breast and cervical cancer is expected to rise faster in APAC than elsewhere. The numbers of new cases and deaths for breast cancer are expected to surpass the global increase between 2020 and 2030, as will mortality for cervical cancer. In most countries in this report, the rise in the number of new cases and deaths for both cancers will exceed the regional average.<sup>2</sup>

Lower- and middle-income countries (LMICs) face a further challenge of demographic and developmental transition with disproportionately high female breast and cervical cancer mortality (15.0 per 100,000 versus a 12.8 per 100,000 global average for breast cancer and 12.4 versus 5.2 per 100,000 for cervical cancer).<sup>1</sup> This is partly because women in LMICs tend to be diagnosed with more advanced stage disease, resulting in poorer outcomes.<sup>9</sup>

### Research project and goals

Given the pressing health challenges faced by women in APAC, there is an urgent need to study cancer through a gender-inclusive lens. With this in mind, Economist Impact has undertaken a research programme into the impact of breast and cervical cancers, and the systems and approaches established to prevent and treat them to achieve the WHO goals.

The WHO's Global Strategy for Cervical Cancer Elimination includes the "90-70-90" targets, which should be met by 2030 for countries to be on the path towards cervical cancer elimination:



**Achieving 90% complete HPV vaccination rates for girls under 15.**



**Screening 70% of women with a high-performance test by age 35 and again at 45.**



**Treating 90% of women with pre-cancerous lesions or invasive cancers.**

Data suggest this strategy will be cost-effective in 74 of 78 lower-income and lower middle-income countries. According to the WHO, achieving the 90-70-90 goals in LMICs will deliver a cumulative avoidance of 300,000 cervical cancer deaths by 2030, and the median cervical cancer incidence rate will fall by 42% by 2045.<sup>3</sup>



For breast cancer, the WHO Global Breast Cancer Initiative, launched in 2021, targets a sustained decrease in mortality of 2.5% per year by 2040. An accompanying framework guides the design of country-specific, resource-appropriate health systems for the delivery of breast-cancer care in LMIC settings based on a set of “60-60-80” targets:



**Recommending that countries focus on breast cancer early-detection programmes to ensure at least 60% of breast cancer cases are diagnosed and treated as early-stage disease.**



**Diagnosing breast cancer within 60 days of initial presentation and commencing treatment within three months of first presentation.**



**Ensuring at least 80% of patients complete recommended treatment.**

Consistently achieving a 2.5% annual decrease in breast cancer mortality would save 2.5m lives over 20 years.<sup>4</sup>

Drawing input from expert interviews, an advisory board and desk research, we studied these two cancers in six Asian countries: India, Indonesia, Malaysia, the Philippines, Thailand and Vietnam. These were selected based on similar developmental levels as lower middle-income (India, Indonesia, the Philippines and Vietnam) and upper middle- (Malaysia and Thailand) as defined by the World Bank.<sup>10</sup>

These countries have an important window of opportunity to reduce the incidence and mortality rates for breast and cervical cancer or at least to mitigate the impending rises.

This report explores the health and economic burden of breast and cervical cancer and the policy environment for tackling both cancers reviewed against a scorecard across five domains, each with multiple sub-domains, to identify opportunities for improvement. The scorecard was informed by a literature review that identified existing policy frameworks and assessments and subsequently developed a novel set of indicators reviewed and refined by an expert panel.

#### **The final indicators span five domains:**

- 1. Policy and planning**
- 2. Prevention and screening**
- 3. Diagnosis and resource capacity**
- 4. Treatment and access**
- 5. Awareness and education**

This report presents the findings, calls to action and six country-level snapshot reports. It assesses current and future epidemiological trends and risk factors, as well as reviewing how health systems are responding. It also explores steps they might take to increase programme effectiveness, and improve health, societal and economic outcomes for the region and its women.

# Risk factors, prevention and treatment

**Cervical cancer** is usually caused by human papillomavirus (HPV) infection.<sup>11</sup> Factors that increase the risk of HPV infection or result in an impaired immune response to HPV predispose to the development of cervical cancer. Early age of sexual debut, the presence of multiple sexual partners or a high-risk sexual partner, history of HPV-related vaginal or vulvar dysplasia (the presence of abnormal cells), other sexually transmitted infections, and an overall immunocompromised state due to conditions such as organ transplantation and HIV infection, increase cervical cancer risk.<sup>12</sup> Cigarette smoking is also a risk factor.<sup>13</sup>

Primary prevention of cervical cancer involves reducing the risk of HPV infection. While safe sex practices reduce HPV risk, the most effective means of lowering of risk is vaccination. The WHO recommends that all countries deliver nationwide HPV vaccination as part of a “coordinated and comprehensive strategy” to target cervical cancer, including health education, screening, early diagnosis, improved treatment and palliative care. The primary target population globally is girls aged 9-14.<sup>14</sup>

Secondary prevention of cervical cancer is achieved through screening, early detection and management of precancerous lesions. Given the long preinvasive phase of disease, this cancer is a perfect target for screening and early detection.

Cervical screening can be performed using the Pap smear where the cervix is visualized using an instrument called the speculum, cells from the cervix are collected using a spatula and studied under the microscope.<sup>15</sup> An alternative that is often used in LMICs is visual inspection under acetic acid (VIA). In VIA, abnormalities of the cervix are identified by staining with acetic acid and suspicious lesions can be treated immediately.<sup>15</sup>

More recently, screening through HPV DNA testing on a cervical or vaginal sample has emerged as a more sensitive test than both cytology and VIA, meaning fewer cases are likely to be missed.<sup>16,17</sup> Overall, HPV DNA testing has been shown to be a cost-effective and high-volume solution for the approximately 1.5bn women who have never been screened.<sup>18,19</sup> Such is its potential impact, the WHO suggests that programmes transition to HPV DNA testing as a first-choice method for cervical cancer screening.<sup>20</sup>

HPV self-sampling (which involves an individual obtaining a kit and collecting one's own vaginal sample) is also being explored globally. The WHO recommends that HPV self-sampling should be made available as an additional approach to sampling in cervical cancer screening services, as it may encourage women to access screening and treatment services, improving coverage, and may help overcome cultural or social barriers that may otherwise keep women from getting screened.<sup>21</sup>

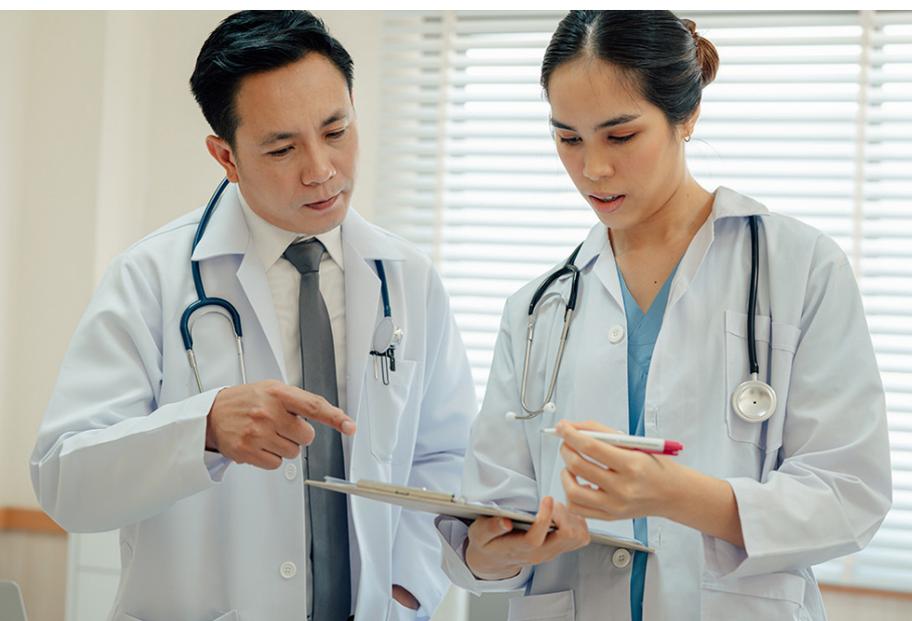
Tertiary prevention refers to management of invasive cervical cancer. Early-stage disease that is confined to the cervix is treated with surgery or radiotherapy. Disease that has spread locally in the pelvis or to adjacent organs is treated with either combined chemotherapy and radiation or chemotherapy alone.<sup>22</sup> Cervical cancer with spread to distant organs is treated with chemotherapy, targeted therapy or immunotherapy.<sup>22</sup> For patients with terminal stages of the disease, palliative care for symptom control and psychosocial support is essential to improve quality of life.<sup>23</sup>

**Breast cancer** risk increases due to both non-modifiable and modifiable factors. Similar to Western cohorts, female sex and advancing age are the most dominant non-modifiable risk factors for breast cancer in APAC. An estimated 5 to 10% of breast cancer cases arise due to heritable genetic mutations, and reproductive and hormonal factors have also been linked to increased risk.<sup>24</sup> Modifiable risks include lack of breastfeeding, weight gain during menopause, smoking, obesity and a lack of physical activity.<sup>25</sup>

High-income countries have adopted organised mammographic screening for early diagnosis of breast cancer, resulting in over 60% of cancers being diagnosed at early Stage (I or II).<sup>26</sup>

Such screening programmes have proven cost-effective. A 2020 systematic review found that age-based breast cancer screening in the United States has reasonable costs per quality-adjusted life year (QALY)—but less so in Asia, owing to lower incidence rates and higher breast density, which can decrease the accuracy of mammography.<sup>27,28</sup> In well-resourced settings, the WHO recommends organised population-based mammography national screening for women aged 50-69 years every two years. This cadence is also suggested in resource-limited settings if certain conditions are met.<sup>29</sup> In those environments with weaker health systems, risk-targeted screening, which looks beyond age to select candidates based on a range of other breast cancer risk factors, including demographic and clinical aspects, can be a more cost-effective approach.<sup>27,30</sup> Given the financial and infrastructure limitations in LMICs, the model of breast health education, self and clinical breast examination (CBE) is an adjunct or alternative to mammographic screening.<sup>31</sup>

Early-stage breast cancer is typically managed with surgery followed by chemotherapy where indicated. If breast-conserving surgery is performed, radiotherapy is given post operatively.<sup>32</sup> Patients whose cancers express hormone receptors usually receive hormonal therapies based on their menopausal status, and those that are HER2 receptor positive are eligible to receive targeted therapy.<sup>33</sup> Locally advanced disease with large breast masses, spread to multiple lymph nodes and/or the skin and muscles near the breast is managed with upfront chemotherapy followed by surgery, radiation and where indicated, hormonal therapy. Patients with metastatic disease will need systemic therapy for disease control.<sup>32</sup> Immunotherapy has also emerged as an important component in the therapeutic management of some breast cancers,<sup>34</sup> and palliative care is an integral part of symptom management for patients with terminal stages of the disease.<sup>35</sup>



# Epidemiological trends in APAC

## Socioeconomic status and demographic changes are driving the women's cancer burden

### Cervical cancer rates are high and set to rise

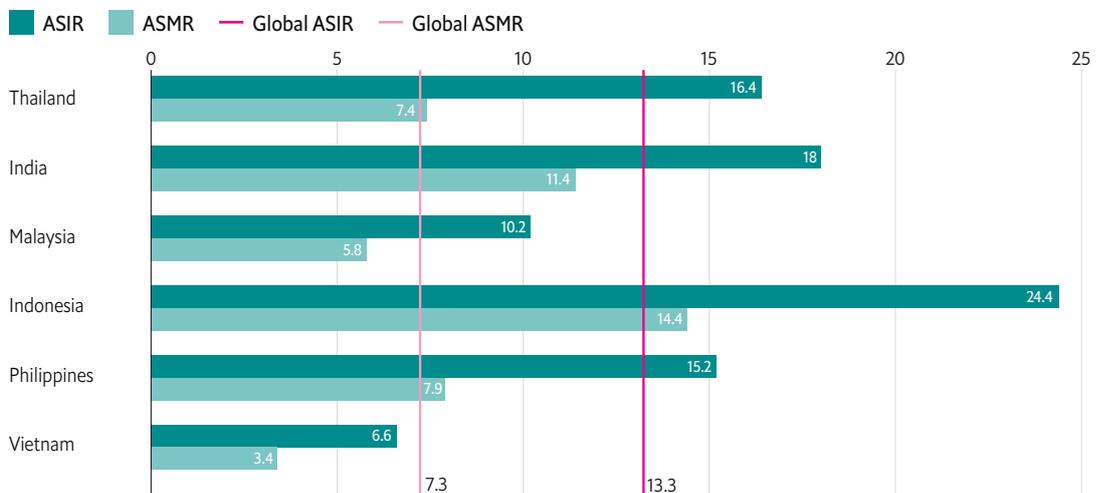
About 90% of cervical cancers occur in LMICs, and some of the highest age-standardised incidence rates (ASIR) are seen in South East Asia and South-Central Asia (the highest rates are in Africa).<sup>5</sup> Over half of global incidence in 2020 was in Asia (58%) which also had the highest death rate for cervical cancer, accounting for 58% of all deaths.<sup>7,36</sup> ASIR outstrips the global average in four of the countries in this study—Thailand, India, the Philippines and, at the high end, Indonesia, where the incidence (24.4 per 100,000) approaches double the global average. Indonesia has the highest age-standardised mortality rate (ASMR) of the six countries, at 14.4 per 100,000.<sup>37</sup>

The Asia region is forecast to see a significant increase in cervical cancer incidence and mortality in coming years, due in part to demographic changes, with incidence (all ages) predicted to rise by almost 19% and mortality (all ages) by almost 25% between 2020 and 2030.<sup>2</sup> It is important to note that these projections were made by the Global Cancer Observatory without taking into account changes to intervention programmes such as screening.

More positively, expanded screening and greater disease awareness have seen declines in cervical cancer incidence and mortality in some countries. For example in Thailand, incidence steadily decreased over two decades following the introduction of organised, nationwide cervical cancer screening.<sup>38</sup>

**Figure 1: ASIR and ASMR for cervical cancer, 2020**

Number of people per 100,000 population



**Table 2: Projection of changes in cervical cancer incidence and mortality (female, all ages (not age-standardised))<sup>2</sup>**

Countries	Cervical cancer incidence			Cervical cancer mortality		
	2020	2030	Change in number of new cases	2020	2030	Change in number of deaths
<b>Thailand</b>	9,158	10,299	<b>+12.5%</b>	4,705	5,897	<b>+25.3%</b>
<b>Vietnam</b>	4,132	5,075	<b>+22.8%</b>	2,223	2,929	<b>+31.8%</b>
<b>Indonesia</b>	36,633	46,070	<b>+25.8%</b>	21,003	28,125	<b>+33.9%</b>
<b>India</b>	123,907	157,068	<b>+26.8%</b>	77,348	99,943	<b>+29.2%</b>
<b>Philippines</b>	7,897	10,302	<b>+30.5%</b>	4,052	5,601	<b>+38.2%</b>
<b>Malaysia</b>	1,740	2,302	<b>+32.3%</b>	991	1,394	<b>+40.7%</b>
<b>Asia</b>	351,720	418,136	<b>+18.9%</b>	199,902	249,610	<b>+24.9%</b>
<b>World</b>	604,127	708,090	<b>+17.2%</b>	341,831	414,520	<b>+21.3%</b>

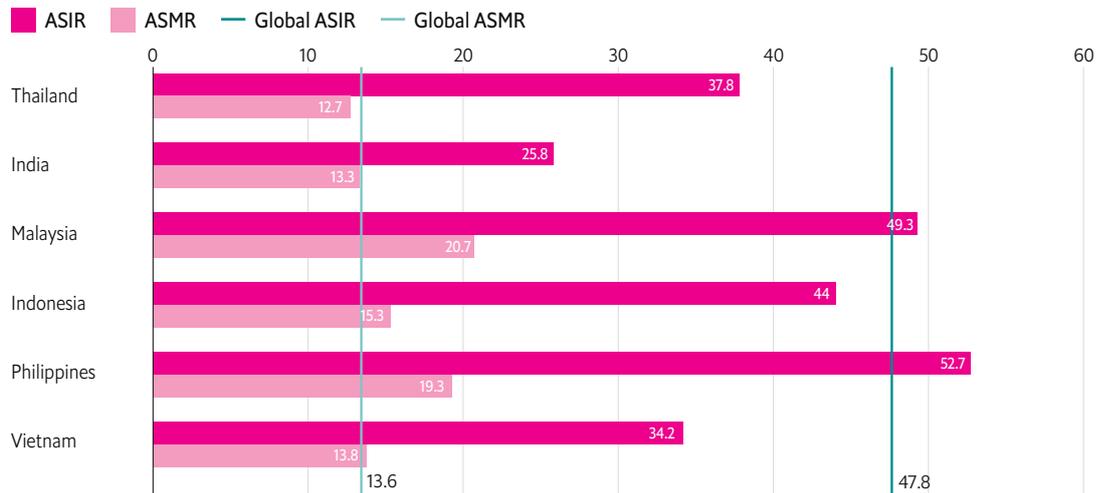
**Breast cancer incidence is rising amidst high existing mortality rates**

A shift in breast cancer epidemiology is underway in the APAC region, echoing demographic changes—put simply, as the region's countries are becoming wealthier and as reproductive patterns are changing, the epidemiological impact of breast cancer, which is more common in wealthier countries and older populations, is rising. As outlined later in this report, the health, social and economic impacts of breast cancer are severe and will worsen without concerted action.

Currently, ASIR and ASMR for breast cancer are both lower in Asia than elsewhere, with ASIR dropping below 30 per 100,000 population in some countries, versus a global average of about 48 per 100,000. In the six countries in this report, incidence is close to or below the global average, with Malaysia (49.3 per 100,000) and the Philippines (52.7 per 100,000) having the highest rates; Thailand, Indonesia and Vietnam all have incidence rates of below 40 per 100,000, with India's the lowest, at 25.8 per 100,000.<sup>37</sup> The age of onset in Asian women is however earlier than elsewhere.<sup>39</sup>

**Figure 2: ASIR and ASMR for breast cancer, 2020**

Number of people per 100,000 population



Despite relatively lower incidence rates, breast cancer deaths disproportionately occur in low- and middle-income countries, and are rising.<sup>40,41</sup> ASMR in Malaysia, Indonesia, the Philippines and Vietnam are all above the global average of 13.6 per 100,000, with Thailand and India being only slightly under.<sup>37</sup> In addition, the demographic

transition underway in APAC is impacting breast cancer incidence—in India, for example, there has been a 40% increase in breast cancer incidence in the past two decades.<sup>42</sup> The expected rise is all the more alarming given the region's high ratio of mortality to incidence at 0.32 (compared to a world average of 0.28).<sup>43</sup>

**Table 3: Projection of changes in breast cancer incidence and mortality (female, all ages (not age-standardised))<sup>2</sup>**

Countries	Breast cancer incidence			Breast cancer mortality		
	2020	2030	Change in number of new cases	2020	2030	Change in number of deaths
<b>Thailand</b>	22,158	25,683	<b>+15.9%</b>	8,266	10,411	<b>+25.9%</b>
<b>Vietnam</b>	65,858	82,752	<b>+25.7%</b>	22,430	29,603	<b>+32.0%</b>
<b>Indonesia</b>	178,361	224,506	<b>+25.9%</b>	90,408	117,026	<b>+29.4%</b>
<b>India</b>	21,555	27,173	<b>+26.1%</b>	9,345	12,141	<b>+29.9%</b>
<b>Malaysia</b>	8,418	11,132	<b>+32.2%</b>	3,503	4,855	<b>+38.6%</b>
<b>Philippines</b>	27,163	36,210	<b>+33.3%</b>	9,926	13,944	<b>+40.5%</b>
<b>Asia</b>	1,026,171	1,240,631	<b>+20.9%</b>	346,009	442,241	<b>+27.8%</b>
<b>World</b>	2,261,419	2,738,403	<b>+21.1%</b>	684,996	857,319	<b>+25.2%</b>

# The social and economic burden of breast and cervical cancer—and the gains from good strategy and funding

## Social burden

### The social impacts are clear

Women, families, health systems and wider societies in APAC all suffer the impact of breast and cervical cancer. These cancers have indirect effects on psychological, emotional, social health and well-being, which especially in the case of women extend to children and families.<sup>44</sup> Women also have distinct risk dynamics for cancer; overweight and obesity are more common in women, and consumption of even moderate levels of alcohol is associated with increased risk of breast cancer.<sup>45</sup> In addition, women's cancers can often be a taboo subject, and women face the risk of being deserted by their partners or ostracised by their families.

Often, especially in lower- and middle-income settings, women are forced to prioritise their family lives over personal health challenges, resulting in suboptimal disease diagnosis and management—and catastrophic emotional, educational and wellbeing impacts on children left behind.<sup>44</sup> Asian women tend to be diagnosed with breast cancer at a younger age than their western counterparts, at 40-50 years of age, placing a major strain on relatively young families, including financially as they leave the workforce. This can lead to an increase in maternal orphans, driving an intergenerational cycle of poverty.<sup>46</sup>

In Asia, the personal economic impacts of cancer on women are clear. One study assessed the outcomes among almost 10,000 cancer patients a year after diagnosis. Of the participants, of whom 64% were women, 29% died and 48% experienced financial catastrophe; only 23% survived and did not experience financial catastrophe.<sup>47</sup> The risks of death and catastrophic payments were associated with clinical variables such as a more advanced disease stage at diagnosis, as well as socioeconomic status pre-diagnosis.

Increasing the focus on women's cancer in the region can support the UN Sustainable Development Goals (SDG), including SDG 3 (good health and wellbeing) as well as the equality-related goals of SDG 5 (gender equality) and SDG 10 (reduced inequalities). Improved health outcomes will increase productivity, while combating inequality will help women and their families, especially those on lower incomes, to achieve better financial security, supporting SDG 1 (end poverty). Finally, SDG 17 (partnerships for the goals) is also key as global partnership and collaboration help ensure that programmes to deliver health targets are sustainable.<sup>48</sup>



### Economic burden

#### Costs are high, especially when it comes to out-of-pocket payments

Both breast and cervical cancer incur significant costs. A study in Indonesia estimated in 2018 that approximately 246,000 years of life were lost to cervical cancer mortality and a total productivity cost of US\$1.7bn. Patients aged 50-64 experienced the greatest losses in earning, followed by those aged 35-49.<sup>49</sup> In Thailand in 2018, the economic burden for advanced cervical cancer was estimated to be approximately US\$139m.<sup>50</sup>

According to US data, annual productivity losses per woman diagnosed with breast cancer ranges from US\$680 for older women to US\$5,169 for younger women.<sup>51</sup> The overall value of work and home productivity losses associated with metastatic breast cancer was highest for “midlife” women (aged 45-64), at US\$246m, compared with around US\$66m for both younger and older women. Midlife women also face the highest number of years of potential life lost (403,786 years), at a cost of US\$4.1bn.<sup>51</sup>

Sub-optimal primary and secondary prevention (screening and, in cervical cancer, HPV immunisation), and access barriers including stigma, lack of awareness and cost, mean too many cases are diagnosed in late stages.

This drives up treatment costs and productivity losses due to increased sickness and mortality. In India, nearly 70% of cervical cancer cases are diagnosed at an advanced stage (Stages III or IV), making treatment more complex and expensive and decreasing the chance of survival.<sup>52</sup> Evidence from Eswatini shows the cost of treatment increases 25-fold between Stage I and Stage IV cases of cervical cancer; even between Stages I and II the difference is four-fold.<sup>53</sup> Late-stage treatment raises costs of hospital care, and rises incrementally on a daily basis for the duration of the patient's stay.<sup>54</sup> In Thailand for breast cancer, the cost of illness per patient was US\$8,391 to US\$10,418 for a diagnosis at Stage I compared to US\$61,076 and US\$63,103 for a diagnosis at Stage III.<sup>50</sup> In a country where the average per capita GDP in 2022 was 247,828 baht (US\$7,651), this is a significant cost.<sup>55</sup>

Out-of-pocket (OOP) payments, which are significant in the APAC region, pose a significant burden to patients and their families, resulting in catastrophic health expenditure. For example, cancer patients in India can be required to pay more than half of the total cost of care.<sup>56</sup> Cervical cancer patients in India spend INR 4,042 (US\$49) to INR 23,453 (US\$286) OOP, and the cost of treatment results in nearly 62% of patients incurring catastrophic health expenditure. Though various publicly financed health insurance schemes cover cervical cancer treatment, payment rates for health benefit packages are built on consultative terms and not on scientific data.<sup>57</sup> In Vietnam, OOP costs for breast cancer are 66% higher for Stage II disease and 148% higher for Stage III disease compared to Stage 0/I disease.<sup>58</sup> In the Philippines, where an estimated 54% of healthcare expenditure is OOP, 70.4% of breast cancer patients face catastrophic spending.<sup>59</sup>

### Indirect costs pose a significant burden for many patients

Indirect healthcare costs comprising transport to facilities, as well as related to food and accommodation, can sometimes be much higher than direct treatment costs and form a significant share of the economic burden of cancer. A study performed in a regional cancer centre in southern India found that the average direct medical cost for patients with breast cancer was INR 866 (US\$11) compared to indirect costs—comprising transport, food and accommodation—of INR 24,547 (US\$300).<sup>56</sup>

Higher spend on indirect costs is likely because the availability of advanced cancer treatments is often restricted to secondary and tertiary centres in cities and large towns, meaning patients from rural areas must travel long distances, paying extra for food and accommodation and requiring extended time off work.<sup>56</sup> In India, 96% of OOP spending (on all cancers) goes towards non-medical indirect costs.<sup>56</sup>

Studies in Iran, Japan, South Korea and Poland put the total indirect and direct costs of breast cancer at between 0.1% and 0.2% of GDP, with the vast majority consisting of mortality-driven productivity losses.<sup>60,61,62,63</sup> Informal caregivers are also impacted by loss of productivity—one study suggests that the productivity losses on caregivers for cancer patients have been underestimated by as much as 72%.<sup>64</sup>

### A strong investment case for health services

Because advanced stage cancer is typically associated with much greater direct costs, it is imperative to shift towards prevention (for cervical cancer) and early diagnosis (for both breast and cervical cancers). High mortality and rising cases in the APAC region underscore the need for action, and studies exploring the cost-effectiveness of screening and prevention (including the cost-effectiveness of risk-based screening in poorer countries) show this is possible even in LMICs and resource-limited settings.<sup>65</sup>

The WHO has estimated that for every dollar invested in interventions to help meet the 90-70-90 cervical cancer elimination targets (such as immunisation and screening), more than US\$3 would be returned to the economy.<sup>3</sup> However, lack of awareness, lack of funding and crucially low priority for women's cancers in public health schemes, mean that there is more that can be done.<sup>66</sup>

For cervical cancer, a concerted, long-term approach will radically improve health, social and economic outcomes, and not just for the directly affected. A model-based study spanning 50 LMICs found both HPV vaccination and screening (conducted once in a lifetime) were cost-effective, and a comprehensive programme could avert 5.2m cases, 3.7m deaths, and 22m disability-adjusted life years (DALYs) over the lifetimes of the intervention cohorts; by the same logic, not enacting broad-scale early prevention would lead to millions of cases, deaths and DALYs.<sup>67</sup>

### WHO predictions if 90-70-90 targets for cervical cancer elimination are met:<sup>3</sup>



There will be US\$3.20 returned to the economy for every dollar invested through 2050 and beyond, based only on women's continued workforce contribution.



The figure increases to US\$26 when the effects of women's improved health on families, communities and societies are considered.



250,000 women will remain productive members of the workforce, adding US\$28bn to the global economy—US\$700m through increased workforce participation and almost US\$27.3bn through the indirect socioeconomic benefits of good health.

For breast cancer, a Vietnam-based study found that the incremental cost-effectiveness ratio per life year gained from the first round of mammography screening was US\$3647 for women aged 50-54 and US\$4405 for women aged 55-59.<sup>68</sup> Mammography screening was cost-effective in all cases across both age groups. A systematic review of breast cancer economic evaluation studies in Asia found that having an organised, population-based national mammography screening programme for women over 50 would be economically feasible in the region.<sup>69</sup>

### Healthcare spends

Financial constraints are a significant obstacle to tackling breast and cervical cancers in APAC. These manifest both in overall spending on healthcare and healthcare spending as a lower priority among our study countries. Healthcare spending as a proportion of GDP ranges from a high of 5.6% of GDP in the Philippines to less than 3% of GDP in India.<sup>70</sup> The global average (in 2019, before the Covid-19 pandemic led to a temporary spending boost), was 9.8% of GDP.<sup>70</sup>

In the long term, the six countries in this report will need to increase healthcare spending in GDP terms as well as develop a sustained, disease-specific funding source. As we have seen, this could be considered an investment. To achieve this, governments should ensure that breast and cervical cancer services are budgeted within national Universal Health Care (UHC) schemes.

### Catalytic funding

More immediately, countries may need to look beyond national health spending to other funding mechanisms to help with specific health challenges like breast and cervical cancer. These may include grants and targeted funding mechanisms by global donors (such as the Global Fund), development agencies (such as the United States Agency for International Development (USAID)

and the French Development Agency (AFD)), multilateral banks (such as the World Bank and the Asian Development Bank) and impact investors (such as the Strategic Investment Fund at the Bill and Melinda Gates Foundation).

There are many existing examples. For example, Unitaid is supporting the WHO's global strategy to accelerate the elimination of cervical cancer by investing to help low-resource countries intensify cervical cancer prevention and implement innovative and affordable screening strategies. Its SUCCESS programme invested €22.6m (US\$24.5m) in cervical cancer elimination strategies in five countries, including the Philippines.<sup>71</sup>

The project involves awareness-raising efforts, simplified screening and secondary cancer prevention by thermal ablation of precancerous lesions. Two years after launch, Unitaid is approaching the WHO target of treating 90% of patients identified with precancerous lesions in the selected countries.<sup>72</sup> Unitaid is also investing USD\$40m in a ten-country project using portable devices for precancerous cervical lesion management, including in India.<sup>73</sup>

### Example from the region

In the Indian state of Tamil Nadu, a large World Bank programme is funding healthcare reforms that targets improving breast and cervical cancer screening through awareness-raising, building the capacity of healthcare providers and laboratory services, and developing a roadmap for population-based screening for both cancers.<sup>74</sup> Other existing programmes seek to achieve specific aims, such as improving screening access, uptake and capacity in hard-to-reach areas and among low-income and vulnerable groups.

Outside of Asia, the US President's Emergency plan for AIDS Relief (PEPFAR) leads the Go Further partnership, launched in 2017 to eliminate AIDS and cervical cancer in Sub-Saharan Africa (women who are HIV-positive are up to six times more likely to develop cervical cancer). The partnership, which aims to reduce new cervical cancers by 95% in the countries in which it operates, had supported over 4.5m cervical cancer screenings for women living with HIV by March 2022.<sup>75</sup> The replicability and scalability of this programme should inspire governments in APAC to seek similar assistance. While PEPFAR's focus in the Africa region is understandable given high AIDS and HIV prevalence, such bodies could look to strengthen their engagement in APAC where the dual threat of HIV/AIDS and cervical cancer are significant. Other organisations active in reproductive health, such as the United National Population Fund (UNFPA), could also strengthen their programme efforts in cervical and breast cancer.

Gavi, the Vaccine Alliance, has pledged a total investment of \$600m and committed to vaccinate 86m adolescent girls in lower-income countries with the HPV vaccine by 2025, preventing over 1.4m future deaths from cervical cancer.<sup>76</sup> However the majority of countries receiving this support are in Africa, with only Indonesia being included (under Gavi's Middle-Income Countries Approach). There is therefore a clear gap for APAC economies.

### **Integrated approaches**

One way to ensure funds are used efficiently is to integrate approaches to tackle different diseases. For example, the strong links between

HIV and cervical cancer have given rise to initiatives that seek to improve prevention of both diseases. Guidance from the Global Fund suggests prioritising cervical cancer screening and diagnosis, HPV vaccination, and cervical cancer treatment as part of a coordinated national HIV/cancer strategy.<sup>77</sup> The Global Fund also has funding support for co-infections and co-morbidities, allowing countries to access resources for co-testing for HIV and HPV.<sup>78</sup>

Many organisations focus their funding on specific disease areas when a more comprehensive, "whole-person" approach could be more effective. An organisation that is combining preventive measures such as screening and diagnosis for HIV and cervical cancer, for instance, could add a simple clinical breast examination. A holistic, comprehensive approach—including in terms of funding—is likely to be more efficient for both resource-constrained governments and external organisations undertaking large programmes.

Prevention services for cervical and breast cancer could also be integrated into existing reproductive health and family planning networks, which could help increase opportunistic screening coverage.<sup>79</sup> However since the target population for family planning only partially overlaps with women targeted for screening, challenges remain and coordination is essential.

### **Innovative funding models can help to fill gaps to serve specific needs**

Even government and donor funding will need to be supplemented by additional, innovative solutions.

Innovative and replicable funding models and initiatives can range from government intervention, including lottery-based funding or sin taxes, to top-up insurance schemes and cancer care plans, and sales-linked donations. Five types of innovative health financing models have previously been identified:<sup>80</sup>



**Government funding schemes**

directed to specific areas and funded by tax revenue or multiple stakeholders



**Blended finance**, through a combination of public or non-profit sources of funding and private-sector financing



**Novel private insurance**, to cover either conditions or patient groups that are not usually covered



**Crowdfunding**, whether from individuals or organisations, encouraged using tax incentives, for example



**Innovative financial services**, such as credit or savings plans, or micro-financing and outcomes-based financing.

Innovative initiatives also include micro-insurance—for example, micro-policies in Thailand are available from convenience stores to provide coverage against risks such as cancer, with annual premiums costing US\$30 per year. Such policies target low-income, rural families who lack insurance due to the complexity and cost of traditional insurance products.<sup>80</sup>

In Vietnam, a crowdfunding model exists which allocates a small sum towards a cause when an individual spends money via a specific route. For every VND1m that an individual spends on a certain credit card, they contribute VND2,000 to the Cancer Patient Support Fund—Bright Future Foundation.<sup>81</sup> Other initiatives include interest-free loans on pharmaceuticals from specific manufacturers, favourable interest-rate credit cards, cryptocurrency-based platforms and mobile health wallets that enable people to pool funds to save, borrow, and share money for healthcare at low costs.<sup>80</sup>

Programmes such as these can help, but cannot replace sustainable, long-term health funding. Governments, global health system actors (such as Unitaaid, PEPFAR and the Global Fund) and catalytic funders should work together to strengthen funding for breast and cervical cancer in the region. The goal of health funding for issues such as breast and cervical cancer is to achieve a fully and sustainably funded UHC that ensures necessary preventive, diagnostic and care services are available in a timely and effective fashion to all who need them.

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### Speeding up drug approval, reimbursement and access

The APAC region lags behind other regions in oncology drug development, approval and reimbursement, and access to advanced diagnostics and therapies.<sup>82</sup> Aside from Japan, which has an advanced drug development landscape, Asian countries are slow to launch new treatments (including approval for reimbursement). For example, whereas the G20 countries launched 16% of new medicines within one year in 2012-21, India launched 2%, and Indonesia 1%.<sup>83</sup> The average delay in launching new medicines was 40 months in Indonesia and 42 months in India. This compares to a G20 average of 27 months, and 15 months in Japan. This puts the two countries almost a year and a half behind the average and two and a half years behind the leading countries in terms of securing new drugs. These rates have also worsened over time.

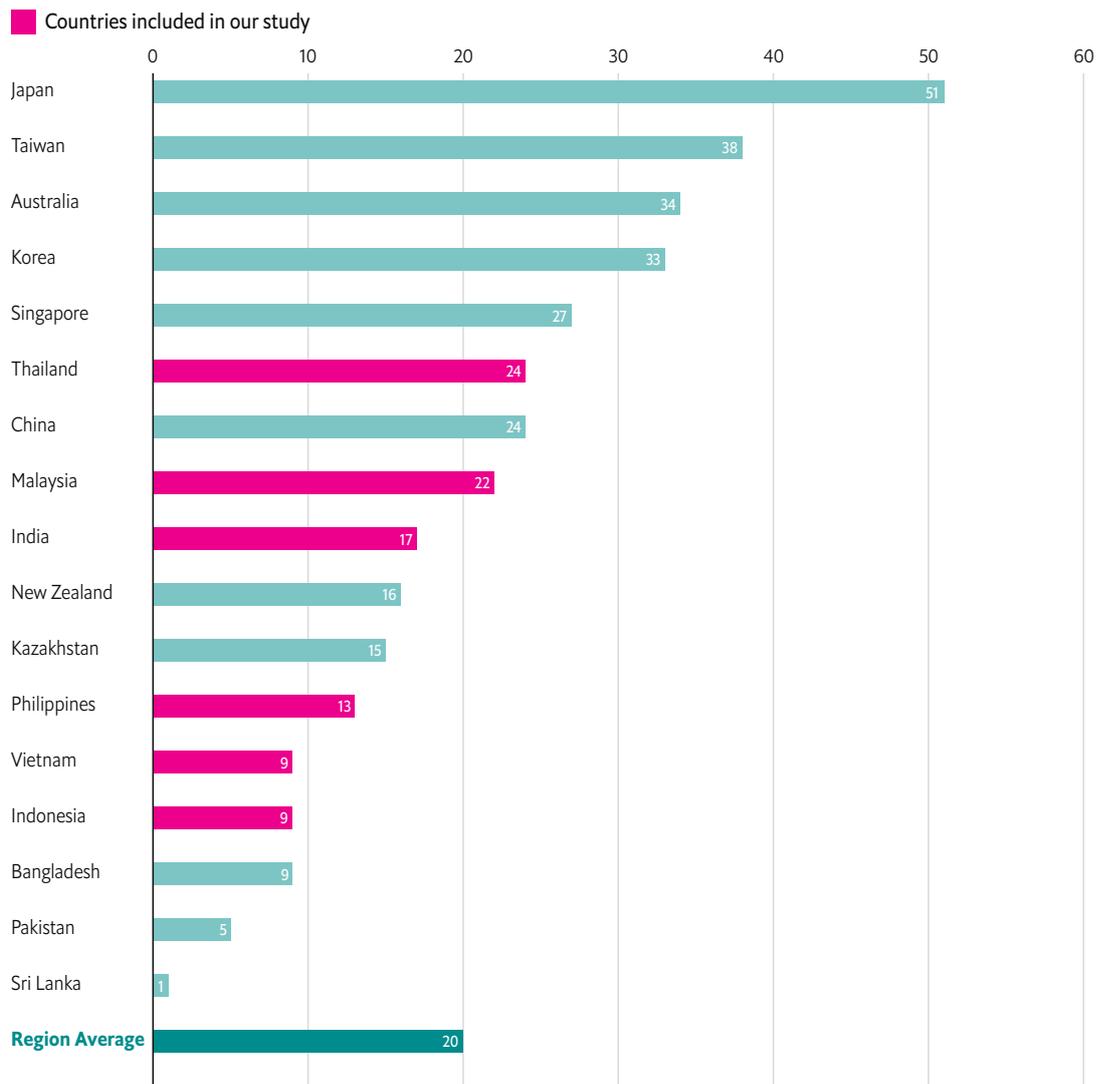
On a regional basis, four of six countries in our study are below average with respect to the launch of new medicines. Whereas the Asia regional average for the launch of new medicines was 20% in 2012-21, the figure was 17% in India, 13% in the Philippines, and 9% in Indonesia and Vietnam.<sup>83</sup>

For advanced cancer therapies, there are disparities within the region. For example, Thailand lags behind wealthier neighbours in access to targeted cancer therapies.<sup>82</sup> In Vietnam, experts identify obstacles including the time required for registration and reimbursement approval for new, advanced treatments compared to neighbouring countries.



There are several key domains in which APAC countries could speed up access to new and innovative treatments. In development and approval, global clinical trials, whereby cohorts from specific regions are incorporated into a wider trial, can help ascertain safety and efficacy in both global and local markets, and quicker approval for all regions involved.<sup>82</sup> Other domains include strong intellectual property rights and enforcement, reimbursement that values innovation, and open, non-discriminatory trade.<sup>83</sup>

**Figure 3: Percentage of new medicines launched by Asia-Pacific market (of all 460 new medicines launched from 2012-2021)<sup>83</sup>**



# Domain 1: Policy and planning



Domain	Scoring range	India	Indonesia	Malaysia	Philippines	Thailand	Vietnam
Policy and planning	0-30	13	15	18	14	16	16

The policy and planning domain covers each country’s approach to tracking women’s cancers and implementing interventional policies. The domain assesses national cancer control plans, including their implementation plans (scoring does not cover funding of plan implementation, which varies within countries.) This domain also covers population-based cancer registries (PBCRs), and the existence and currency of breast and cervical cancer guidelines. Three countries in the study (Malaysia, Thailand and Vietnam) score in the “moderately high” band in this domain, while India, Indonesia and the Philippines score in the “moderately low” band.

### National plans are in place

National Cancer Control Plans (NCCPs) are a cornerstone of effective policy. The 2017 World Health Assembly resolution on cancer prevention and control endorsed the inclusion of NCCPs for all countries, considering them essential to achieving the related Sustainable Development Goals.<sup>84</sup> These detail national strategies to address cancer, detailing how interventions such as awareness, prevention, early detection and treatment are prioritised and coordinated.

They should be goal-oriented, evidence-based and regularly updated (the benchmark awards the highest score if an NCCP has been updated in the past two years). NCCPs must also set realistic targets, and show clear evidence of implementation and goals.

### All six countries have an NCCP:

- In India, the NCCP is included within the National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular disease and Stroke (NPCDCS).<sup>85</sup> Within this, the Operational Framework Management of Common Cancers was last updated in 2016.<sup>86</sup>
- In Indonesia, the NCCP 2019-2024 has been drafted but not officiated, and will be integrated into a larger National Plan of NCD currently under development.<sup>87</sup>
- Malaysia’s NCCP was updated in 2021.<sup>88</sup>
- The Philippines’ National Integrated Cancer Control Strategic Plan 2021–30 is currently under development following the signing of the new National Integrated Cancer Control Act (NICCA) in 2019 and approval in 2021.<sup>89</sup>

- In Thailand, the National Cancer Institute (NCI) developed the NCCP which was last updated in 2018 for a 5 year period (2018-2022).<sup>90</sup>
- In Vietnam, the NCCP was first launched in 2008.<sup>91</sup> A new detailed NCCP to amend the 2008 version is in development, and will be merged into the National Programme on Non-communicable Disease (NCD) Prevention and Control for 2022-2025.<sup>92</sup>

When assessing comprehensiveness, the benchmark assesses goals, objectives and evidence-based interventions spanning prevention to survivorship. All countries perform well across the care journey, although only Malaysia and Indonesia include details on survivorship.

**“Even when the best care is given, if we are not seeing a difference in mortality, we need to rethink whether what we're giving is really the best. There has to be an impact on endpoints. Without tracking outcomes, it is hard to know what is appropriate and what we should implement at the population level.”**

Dr Rajendra Achyut Badwe, Director of the Tata Memorial Centre in India

Successful cancer control measures are not only comprehensive on paper but effectively implemented. “Even when the best care is given, if we are not seeing a difference in mortality, we need to rethink whether what we're giving is really the best. There has to be an impact on endpoints”, says Dr Rajendra Achyut Badwe, Director of the Tata Memorial Centre in India. “Without tracking outcomes, it is hard to know what is appropriate and what we should implement at the population level.” In terms of implementation plans, two

countries—India and the Philippines—lack specific targets to achieve cervical cancer elimination. Malaysia introduced The Action Plan Towards The Elimination of Cervical Cancer in Malaysia in 2021, which contains clear activities, performance indicators, targets, and responsibilities, but lacks a clear, time-bound implementation plan and neither the government nor health service have published progress reports.<sup>93</sup> In Vietnam, the Ministry of Health and the United Nations Population Fund (UNFPA) jointly launched The National Action Plan on Prevention and Control of Cervical Cancer in Viet Nam in 2016 for the period from 2016 to 2025, which also has clear goals including screening 60% of women between the age of 30 and 54 for cervical cancer and vaccinating 25% of women and girls with the HPV vaccine by 2025.<sup>94,95</sup> The benchmark scoring assesses if there is an implementation plan in place within the respective country but does not measure on-the-ground implementation which might vary. None of the countries in our study have yet introduced long-term surveillance systems to monitor the effectiveness and impact of cancer control interventions and activities, though plans are in place in Malaysia for cervical cancer.<sup>93</sup>

#### **Most countries have recently updated clinical guidelines**

All of the countries score well for the existence of clinical guidelines for both breast and cervical cancer. This is important, because clinical guidelines help to ensure that nationally mandated care policies are implemented at sub-national levels. Every country has guidelines for both breast and cervical cancer, and only Malaysia has a guideline (for cervical cancer) that has not been updated in the past five years (it was last updated in 2015)<sup>96</sup>—all other guidelines have been updated recently (as recently as December 2022 for the Philippine breast cancer guidelines)<sup>97</sup> and provide clear directions.



However, not all countries' guidelines are in line with recommendations set out by the WHO, especially for cervical cancer. India and Vietnam do not provide guidelines on implementing a HPV vaccination programme (though these are in development), and only Thailand recommends HPV DNA screening starting at age 30 with regular screening every 5 years.<sup>98</sup>

#### **The usage of population-based registries is not widespread**

PBCRs play a vital role in cancer surveillance, serving as a barometer for efforts to reduce the cancer burden and a basis for research, planning, and evaluation of prevention and control interventions. Unfortunately, the usage of PBCRs is far from widespread in APAC. There is no national registry in Indonesia, the Philippines, Thailand and Vietnam, while in Indonesia, Malaysia and the Philippines registries do not link with other health information systems. Only one country—Thailand—has a registry that covers more than 20% of the population, yet it is not a national registry – there are 15 distinct PBCRs.<sup>99</sup>

Conversely, India has a national PBCR that covers less than 15% of the urban population and less than 1% of the rural population,<sup>100</sup> while there is no publicly available data on the coverage of Malaysia's national PBCR. Vietnam has nine regional cancer registries, seven of which are hospital-based and two of which are population-based (in Hanoi and Ho Chi Minh City), however these are not sufficient to cover the whole Vietnamese population.<sup>101</sup> The shift to national population-based registries is a clear area of opportunity for several countries, as is the expansion of existing national registries and the roll-out of PBCRs specifically for breast and cervical cancer. None of the six countries have disease-specific PBCRs for either of the two diseases.

## Domain 2: Prevention and screening

Low
  Moderately low
  Moderately high
  High

Domain	Scoring range	India	Indonesia	Malaysia	Philippines	Thailand	Vietnam
Prevention and screening	0-33	14	20	22	18	30	11

Primary, secondary and tertiary forms of prevention are vital to ensuring that large numbers of women can avoid the direct impacts of breast and cervical cancer. Implemented effectively, prevention efforts, including primary forms such as vaccination (for HPV in the case of cervical cancer) secondary forms such as screening, and tertiary forms (early-stage disease management), reduce the impact on health services and avert the larger indirect impacts and productivity losses of later care. This is extremely important to LMICs in our study. For both breast and cervical cancer, screening is the major tool (including for HPV in the case of cervical cancer prevention).

Real-world effectiveness is key to programmes such as these, which must reach far and wide.

Countries need to put in place well-organised, funded, population-based national screening and HPV immunisation programmes that follow WHO guidance. The complexities of screening programmes are often misunderstood or not acknowledged, says Dr Partha Basu, Branch Head of the Early Detection Prevention and Infections Branch at the International Agency for Research on Cancer (WHO). "If vaccination is the low hanging fruit, screening is much more complex," he says. "It is very difficult to implement and then make sure that there is adequate quality to have an impact.

Most people don't understand; they think, 'Screening is just about doing the test,' and that's all. But it never works like that. Ensuring appropriate management of screen-positive women is crucial".

Vietnam and India have the most room for improvement, achieving a "moderately low" score. Indonesia, Malaysia and the Philippines score "moderately high", while Thailand scores "high". Thailand is the clear leader, achieving near full-marks, especially for its cervical cancer programme.

#### **HPV vaccination has been embraced but must go further**

All six countries in this study operate HPV immunisation programmes, although only four (Indonesia, Malaysia, the Philippines and Thailand) are national. India embarked on the first part of a three-phase national HPV immunisation programme in January 2023, which is due to be complete in 2025, with an aim of vaccinating 11.2m girls ages 9 years old annually.<sup>102</sup> Vietnam is introducing four more vaccines into its Expanded Immunisation Programme, with the HPV vaccination expected in 2026.<sup>103</sup> However even when a national programme exists, coverage is inconsistent: it drops to below 20% of the target population in two countries (India and Indonesia) while exceeding 50% in Malaysia and Thailand; coverage in the Philippines is 24% for girls under 15 in selected elementary schools and there is no publicly available data for Vietnam.<sup>104</sup> Indonesia is gradually expanding HPV vaccination, at a pace of one province per year; the programme is expected to cover 38% of the target population in 2024, some way short of the WHO target of 90% by 2030.<sup>105</sup>

#### **Cervical cancer screening coverage and methodologies vary between countries**

Organised, population-based national screening programmes are the gold standard for tackling cervical cancer and reducing cervical cancer mortality.<sup>106</sup> Yet three countries (India, Malaysia and the Philippines) do not operate organised screening programmes. In Indonesia screening

is performed by VIA every 5 years for all women aged 30 to 49 years<sup>107</sup> while Thailand's national policy is to screen women aged 30-60 years at 5-year intervals and using HPV DNA.<sup>98</sup> Vietnam is in the midst of a pilot organised, population-based national screening programme in some provinces due to run until 2025.<sup>108</sup> Opportunistic screening programmes exist in all six countries.

Though the WHO recommends HPV DNA testing (either self-sampled or provider-collected) as the primary screening test for HPV, five countries (all but Thailand) continue to use VIA or cytology. While in India the National Cancer Grid (NCG) recommends HPV DNA testing as the primary screening method in enhanced- and high-resource settings, the government's operation framework only provides information on screening through VIA.<sup>86,109</sup> In Thailand, HPV DNA testing was introduced as the primary cervical cancer screening method in 2020, so this is the only country that aligns with WHO recommendations.<sup>98</sup> Malaysia is transitioning to HPV DNA as the primary screening method.<sup>98</sup>

Malaysia and Thailand are the only countries with self-sampling as part of cervical cancer screening programmes<sup>88,110</sup>, although India, the Philippines and Vietnam are undergoing pilot studies. A pilot conducted by hospitals in India has recorded acceptance of self-screening among women of 99.2%.<sup>111</sup> The Philippines is part of the three-year SUCCESS programme, which includes self-sampling among its strategies to drive the shift from opportunistic to organised prevention.<sup>112</sup> A pilot study of self-sampling based in the Vietnamese capital, Hanoi, concluded in 2021.<sup>113</sup> Generally, the conclusions of these pilots was that self-collection HPV testing was acceptable to participants, suggesting it could be beneficial for cervical cancer reduction.<sup>114</sup> Self-sampling could also be used to mitigate the other major regional issue: screening uptake is low in five of the six countries; in the Philippines, Indonesia and India, 2021 WHO country profiles state that less than one in 10 women have been screened for cervical cancer in the last 5 years.

Vietnam is two in 10, Malaysia is four in 10 and Thailand is the highest at six in 10.<sup>115</sup> In Thailand, evaluation of screening between 2005 and 2014 showed uptake of over 70%.<sup>98</sup>

In addition, some countries lack a mechanism to track screening uptake, which is key to understanding the success of programmes. While all countries apart from India and Vietnam have a screening registry, only the Philippines, Indonesia and Thailand have a registry which identifies women eligible for screening, and only Indonesia and Thailand have a mechanism to track a woman's history of screening.<sup>116</sup>

**A lack of organised screening, limited uptake and limited use of mammography are widespread issues with breast cancer screening**

For breast cancer, the WHO suggests that in limited resource settings with relatively strong health systems, organised, population-based national mammography screening programmes should be in place for women aged 50-69 years, every 2 years.<sup>29</sup> None of the countries represented in our study have an organised breast cancer screening programme, with all relying instead on opportunistic testing. In four countries opportunistic testing is conducted nationally at a public health system level, while in Vietnam and in the Philippines no nationwide breast cancer screening programme currently exists.

As well as a lack of organised coverage, uptake is an issue, falling below 30% of the target population in India, Indonesia, the Philippines and Vietnam. Uptake of CBE in Malaysia increased from 52% to 65% in 2006-14, although only 2.7% of women over the age of 40 were screened in this way, suggesting issues with prioritisation.<sup>117</sup> In Thailand, uptake of all breast cancer screening was 57.9% in 2009, though more up to date numbers cannot be found.<sup>118</sup>

Another gap in breast cancer screening is the method used in the region, with CBE being the standard method in all six countries. Not all countries represented in this study have the equipment, infrastructure and workforce in place to sustain mammography screening, and in these settings, CBE may be more promising. However, given that results from mammography screening programmes suggest a reduction in breast cancer mortality by approximately 20% at 11 years of follow up, efforts should be made to move towards a mammography-first programme, especially for high-risk populations.<sup>29</sup> Mammography is available at the public health level in Malaysia, where opportunistic mammography screening is offered at Ministry of Health clinics with mammogram facilities and private hospitals.<sup>119</sup> However there is a lack of screening facilities outside of the main cities within Malaysia, and having to travel long distances leads to a reduction in mammography screening uptake.<sup>120</sup> Recently, a subsidised mammogram programme has been implemented in private healthcare facilities designated by the National Population and Family Development Board.<sup>117</sup> In Vietnam, mammography is provided for free in case of referral.<sup>121</sup>

# Domain 3: Diagnosis and resource capacity

Low
  Moderately low
  Moderately high
  High

Domain	Scoring range	India	Indonesia	Malaysia	Philippines	Thailand	Vietnam
Diagnosis and resource capacity	0-28	14	5	18	11	12	12

While preventing cancer is the optimal goal, it is not always possible. A large challenge, for patients and health systems, is to effectively respond to breast and cervical cancer in terms of diagnosis and primary treatment. Countries often face challenges across the care pathway from diagnosis to treatment. “[There is a need to focus] on primary health care, trying to improve capacity to be able to recognise at least the symptoms and do some basic examination; that is number one,” says Dr Basu. “Number two, there has to be a clear referral pathway creating access to the diagnostic pathways.”

A review of barriers which influence timely breast cancer diagnosis and treatment in Asia identified delivery of healthcare (which can be of low quality) and the health workforce (unavailability of physicians) as the highest barriers.<sup>122</sup>

We have assessed this domain by looking at how guidelines focus on the capacity for diagnosis and intervals between diagnosis and treatment, as well as assessing public-sector access to diagnostics. Finally, we assess health system capacity, both in terms of diagnostic and treatment tools and workforce. This is the weakest domain for most countries, with access to public-sector services a notable weakness across the group.

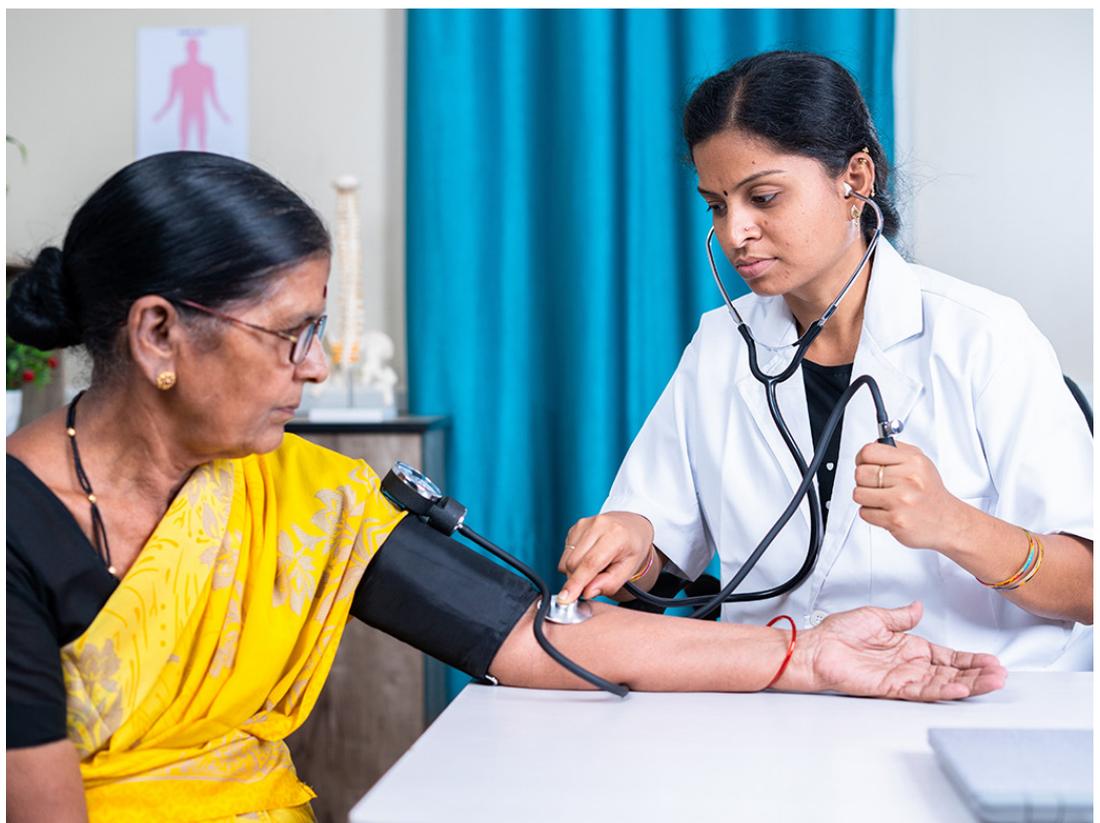
**“[There is a need to focus] on primary health care, trying to improve capacity to be able to recognise at least the symptoms and do some basic examination; that is number one. Number two, there has to be a clear referral pathway creating access to the diagnostic pathways.”**

Dr Partha Basu, Branch Head of the Early Detection Prevention and Infections Branch at the International Agency for Research on Cancer (WHO)

### Opportunities are widespread

The six study countries struggle with limited capacity to diagnose and treat breast and cervical cancers due to poorly-resourced health systems and limited access to public-sector care. Across six types of diagnostic tools used in cancer cases (breast and cervical cancer included), none are accessible in the public sector across all countries. Specifically for breast cancer, Vietnam provides free access to mammography in case of referral.<sup>121</sup> While Malaysia provides mammogram services through some public health institutions, this is not universal. All countries but India cover biopsy under UHC, and evidence could not be found to indicate that Indonesia provides coverage for any diagnostic tools other than biopsy. Biomarker testing, next generation sequencing (NGS) and genetic testing are not available in the public sector in most countries; though Thailand recently started funding BRCA1/BRCA2 genetic testing in patients with breast cancer.<sup>123</sup>

In Thailand, Malaysia, and the Philippines, because NGS testing is not reimbursed and has high out-of-pocket expenditures, its uptake is much lower than in countries where it is reimbursed such as Japan and South Korea.<sup>124</sup> Even if offered free of charge, diagnostic tests may not be readily available and accessible. In the Philippines, biomarker testing for breast cancer is only available in six centres all located in the city of Manila. Due to the absence of tests in their area of practice, this hindered testing for 60% of medical oncologists in the Philippines according to one study.<sup>125</sup> In Thailand there can be long referral processes, and limited access to diagnostic tools in non-municipal and rural areas.<sup>126</sup>



### Capacity is strained

Health systems and workforce capacity are vital to delivering prevention and treatment on a national level. Limited capacity, whether of technologies like MRI scanners and mammography or personnel such as radiographers, are a significant hindrance to cancer care.

India and Malaysia are the two best performers in this domain, although even they do not enter the highest scoring band. Health system capacity and workforce numbers (across both public and private sectors) were assessed based on WHO country profiles, and Thailand and Indonesia score low for radiologist numbers, with less than 100 radiologists per 10,000 cancer patients—Indonesia has 26 per 10,000<sup>127</sup> while Thailand has 81 per 10,000<sup>128</sup>—this is versus 211 per 10,000 in countries in Europe.<sup>129</sup> For the number of surgeons in the country per 10,000 cancer patients, no countries come close to the European median (848 surgeons per 10,000 cancer patients).<sup>129</sup> Four countries—the exceptions being India and Malaysia—receive very low scores for the quantity of mammograms and MRI scanners (they have less than 20 mammograms per 10,000 cancer patients and less than 5 MRI scanners per 10,000 cancer patients, or no publicly available information on numbers). The Philippines has 5.6 mammograms per 10,000 patients,<sup>130</sup> and Thailand has 12.6.<sup>131</sup> The leader by far is Malaysia, with 44.3 mammograms per 10,000.<sup>132</sup> The European median for mammography is 28 per 10,000 cancer patients.<sup>129</sup> The countries with insufficient numbers of MRI scanners are Indonesia with 2 per 10,000, the Philippines with 2.2 per 10,000,<sup>130</sup> Vietnam with 3.1 per 10,000<sup>133</sup> and Thailand with 3.7 per 10,000.<sup>131</sup> The European median for MRI scanners is 21.6 per 10,000,<sup>129</sup> almost matched by Malaysia, which has 21 per 10,000.<sup>132</sup> India has 17.5 per 10,000.<sup>134</sup>

Breast and cervical cancer cases also require specialists, such as oncoplastic breast surgeons and gynaecologic oncologists. Without the right specialties, disease management will be suboptimal, as general surgeons may not be equipped with the requisite knowledge. There are too few specialists in the APAC region, resulting in longer waiting times and suboptimal treatment.<sup>135</sup> Capacity shortfalls are more pronounced in rural versus urban settings because specialist and large-scale health facilities are commonly located in larger cities. Evidence from Thailand demonstrates that access to screening and care services is higher in urban settings.<sup>136</sup> In the Philippines, over half of medical oncologists practice in the capital Manila.<sup>125</sup> In Vietnam, there are shortages of healthcare workers and physicians in mountainous and remote areas compared to the national average.<sup>137</sup>

There are opportunities to expand the diagnostic focus of guidelines, particularly with regards to access measures, and, in cervical cancer, to link HPV-diagnosed patients with prevention and care resources. Appropriate referral mechanisms can improve quality of care, and only Malaysia and the Philippines provide clear recommendations for the interval between diagnosis and initial treatment. The Malaysia cervical cancer guidelines state the recommended time frame for referral of abnormal cytology to gynaecology clinic<sup>96</sup> and breast cancer guidelines clarify which patients should be referred early (within two weeks) to breast or surgical clinic for further evaluation.<sup>138</sup>

# Domain 4: Treatment and access



Domain	Scoring range	India	Indonesia	Malaysia	Philippines	Thailand	Vietnam
Treatment and access	0-26	13	15	18	12	19	20

Access to cancer treatment must be straightforward, timely, coordinated and individualised to improve the possibility of less intensive treatment regimens and better survival outcomes. Equality of access, especially for rural dwellers and poorer populations, is especially critical in the APAC region.

In this domain, we assess how breast and cervical cancer guidelines incorporate specific aspects of treatment, including shared decision-making, multidisciplinary teams (MDTs) and supportive or palliative care. We also assess public-sector access to a variety of treatments, ranging from surgery to rehabilitation and hospice care, and including drugs listed on the WHO 2021 Essential Cancer Drugs List, which is a list aimed to help countries select effective, safe, and cost-effective medicines for their national essential medicines lists (NEMs).<sup>139</sup> Countries do moderately well on this domain, with only the Philippines and India scoring moderately low. That said, there are opportunities for improvement across the board.

### Expanding clinical guidelines

All countries cover treatment to some extent in their cervical and breast cancer guidelines but there are opportunities for multiple countries to build in shared decision-making and MDT provision. For breast cancer, information on shared decision-making only appears in the guidelines of India and Vietnam, while a MDT approach is only recommended in the guidelines of Malaysia, Vietnam and Thailand, though local experts from Thailand have noted that these tend to be only in large hospitals and that despite guidelines, there can be poor implementation of MDTs, and fragmented care. For cervical cancer, Malaysia, the Philippines and Vietnam cover shared decision-making while Malaysia, Thailand and Vietnam also include recommendations around the use of MDTs.<sup>96,140,141,142</sup>



**Access to treatment is generally good, although more can be done to manage the impact of certain therapeutics**

Public-sector access to treatment for both breast and cervical cancer is generally good. For example, access is available under UHC in all countries to surgery and radiotherapy. Reimbursement of WHO-recommended drugs is also largely available for both conditions although it is lacking in India, Indonesia, Malaysia and Thailand for certain essential breast cancer drugs and in India for essential cervical cancer drugs.

The most significant area for improvement comes in two areas designed to manage the impact of invasive treatment, and which improve quality of life, especially for younger women: fertility preservation, for which there is no public sector access under UHC in any country, and breast reconstruction, which is only accessible via the public sector in Indonesia and Vietnam.<sup>63,143,144</sup>

**Access to innovative therapies is lacking**

There is scope to expand drug access beyond the WHO Essential drugs for both conditions, especially in India, Indonesia and the Philippines.

While basic services and drugs for breast cancer and cervical cancer are generally available, there is limited access to more advanced innovative therapies in the region, which tend to not be reimbursed. Cancer treatment is moving away from standard chemotherapy, with targeted therapies showing an improvement in survival rates.<sup>145</sup> As previously noted, countries within the APAC region, particularly Vietnam, Indonesia and the Philippines, are slower than their neighbours in oncology drug development, approval and reimbursement, and access to more innovative therapies, and this gap should be addressed.<sup>84</sup> In Malaysia, while hormone therapy and chemotherapy are well established in the public sector, innovative medicines such as targeted therapy and immunotherapy are generally accessed only through the private sector and patients must pay out of pocket.<sup>146</sup> In Thailand, a recent study found a disparity in access to high-cost breast cancer drugs compared to higher income Asian countries such as Japan and Singapore, with drugs such as certain immunotherapies being available but not reimbursed under universal coverage.<sup>145</sup>

On a country-by-country basis, India and the Philippines in particular have scope to expand public-sector access to drugs and other treatments; it is no coincidence that OOP payments are common in both countries.

# Domain 5: Awareness and education

Low
  Moderately low
  Moderately high
  High

Domain	Scoring range	India	Indonesia	Malaysia	Philippines	Thailand	Vietnam
Awareness and education	0-26	20	20	20	19	20	13

Awareness and education about the symptoms and signs of breast and cervical cancer are the basis of effective prevention and timely action. Awareness and education can also overcome stigma and social and psychological barriers associated with breast and cervical cancer care that prevent women from seeking diagnosis and treatment even once they have received positive screening results.<sup>147</sup>

Community-level involvement is vital to achieving long-term public education.

We assess this domain in terms of patient engagement and educational initiatives for both diseases. With the exception of Vietnam, scores are good across both sub-domains, although there is scope for improvement in patient engagement.

### Public education is a strong-performing policy area

Countries' performance is generally good, with five countries (all but Vietnam) scoring in the moderately high band. Countries do especially well in promulgating educational programmes which have been widely employed for several years, community-based outreach, and in forming patient organisations, which provide peer support, raise awareness, reduce stigma, educate the public, and influence policy.<sup>148</sup> In Vietnam, while there are independent non-governmental patient organisations which cover breast cancer such as the Vietnam Breast Cancer Network and the Resilient Women's Club, the country does not have a legal regulation for the establishment of these patient organisations or patient advocacy groups, which limits their remit; this has resulted in low scores in this area.

### **Governments should be involved for sustainable efforts**

Governments are working collaboratively with patient organisations, which is important to maintain momentum. In India for example, the National Cancer Grid (NCG), a network of cancer centres, institutes, and patient groups, is collaborating with the Indian government to enhance cancer care, launched in 2012 and coordinated by Tata Memorial Centre in Mumbai.<sup>149</sup> In Indonesia, the Coalition to Prevent Cervical Cancer (KICKS) brings together six organisations (including professional and patient organisations) which work to increase public awareness for cervical cancer by supporting government efforts to accelerate cervical cancer prevention national programmes, namely HPV screening and vaccination.<sup>150</sup> Many countries also organise events and campaigns around cervical cancer awareness month and breast cancer awareness month, often run in collaboration with Ministries of Health. In the Philippines, May is declared as Cervical Cancer Awareness Month, with campaigns operating since 2003 to improve knowledge of cancer and distribute informational resources. During this month, women aged 21 years and above can undergo free cervical cancer screening at the Department of Health hospitals.<sup>151</sup> There is, however, potential for governments to play a larger role in community-based outreach programmes, which tend to be run by civil society organisations.

Education efforts are key to promote breast and cervical cancer screening awareness.<sup>152</sup> In our countries of study, many patient organisations produce educational materials and hold talks, such as the National Cancer Society Malaysia and the Indian Cancer Society, though these tend to be organised independently without

government intervention. A good example of government-led education is in Thailand, where education programmes have been incorporated into the national cervical cancer screening programme since 2005, a collaboration between the National Cancer Institute (NCI), National Health Security Office (NHSO) and the Ministry of Public Health. Educational materials on screening are distributed through district health promotion officers, village health volunteers and the public.<sup>153</sup>

### **Collaboration must stretch to formal policy making**

While there are joint programmes between patient groups, many are not engaged in formal policymaking even though patient and public involvement is key for the development and implementation of clinical practice guidelines.<sup>154</sup> The Philippines is the only country which lists a patient organisation, the I Can Serve Foundation, as contributing to its breast cancer guidelines.<sup>97</sup> Patient groups tend to be more involved in NCCPs, with only Thailand and Vietnam offering no evidence of patient groups' contribution. Engagement could be more substantial in decision-making processes, as patient perspectives are an important factor in reimbursement discussions, for example. It is straightforward to involve patient groups in the development of such key documents and within the means of governments. It is also an opportunity to address gaps in policy and improve outcomes for patients and potential patients. The Union for International Cancer Control (UICC) is helping build the capability of patient groups to learn and collaborate; UICC and other patient advocacy groups can do more to raise the awareness among health ministries as to the benefits and viability of involving patient groups in policy.<sup>155</sup>

# Case study: Reducing the burden of breast and cervical cancer in Australia

Over the past decade, a 33% increase in the incidence of breast cancer in Australia has been countered by a 43% decline in mortality while the ASIR and ASMR of cervical cancer have steadily decreased in recent decades.<sup>156</sup> Concerted efforts have driven this progress—yet even a high achiever like Australia has opportunities to improve breast and cervical cancer care.

## Prevention and screening

In 2007 Australia launched one of the world's first fully-funded organised HPV vaccination programmes, targeting school children aged 12 to 13 years.<sup>157</sup> This was expanded to include boys in 2013, and by 2020, 87% of girls and 85% of boys younger than 15 years had received the vaccine. Implementation has been associated with a 90% reduction in infection with HPV types that cause almost three-quarters of cervical cancers.<sup>157</sup> Organised, population-based national cervical cancer screening programmes have been in place since 2017, using HPV DNA testing every five years for women aged 25-69. Self-sampling has also been universally available since July 2022.<sup>158</sup>

It is estimated that Australia will be among the first countries to reach the WHO cervical cancer elimination goal of less than 4 cases per 100,000 population, doing so by 2028. Annual mortality rates are expected to drop to less than 1 per 100,000 population by 2034.<sup>159</sup>

In terms of breast cancer, screening is also well-organised; BreastScreen Australia actively invites women aged 50-74 to receive a two-yearly mammogram, and women aged 40-49 and over 74 can also access free mammograms. In 2020-21, 1.7m women aged 50-74 (50% of the target population) participated.<sup>160</sup> The aim is to achieve coverage exceeding 70%.<sup>161</sup>

## Access to therapeutics and palliative care

Access to cancer therapeutics has steadily improved in Australia, as has disease survival rates. For example, a study based on the South Australian Cancer Registry evaluated an estimated 13,000 patients with invasive breast cancer diagnosed between 2000 and 2014, revealing an increase in five-year survival to 91% for 2010-14.

Surgery was performed in about 90% of women, systemic therapy was administered in 72% and radiation in 60%.<sup>162</sup> Palliative care is also given priority in cancer management, and Palliative Care Australia provides strategic direction, awareness-raising campaigns and events to improve health worker knowledge.<sup>163</sup>

**Australia has taken a robust approach to tackling cancer**

Cancer Australia is a government agency established in 2006 to improve cancer care, reduce disparities and improve outcomes. It publishes National Cancer Control Indicators, covering prevention, screening, diagnosis, treatment, psychosocial care, research and outcomes. State and territory-based registries are united by the Australian Association of Cancer Registries.<sup>160</sup>

Optimal care pathways are published for various cancers. A breast cancer pathway has been published and a cervical cancer pathway is currently under development.<sup>164</sup> The first nationwide Australian Cancer Plan was launched in 2021 although there were previously regional cancer plans, and it is now open to public consultation.<sup>165</sup> There is also an active network of patient organisations.

**Despite strong progress, there are opportunities for improvement**

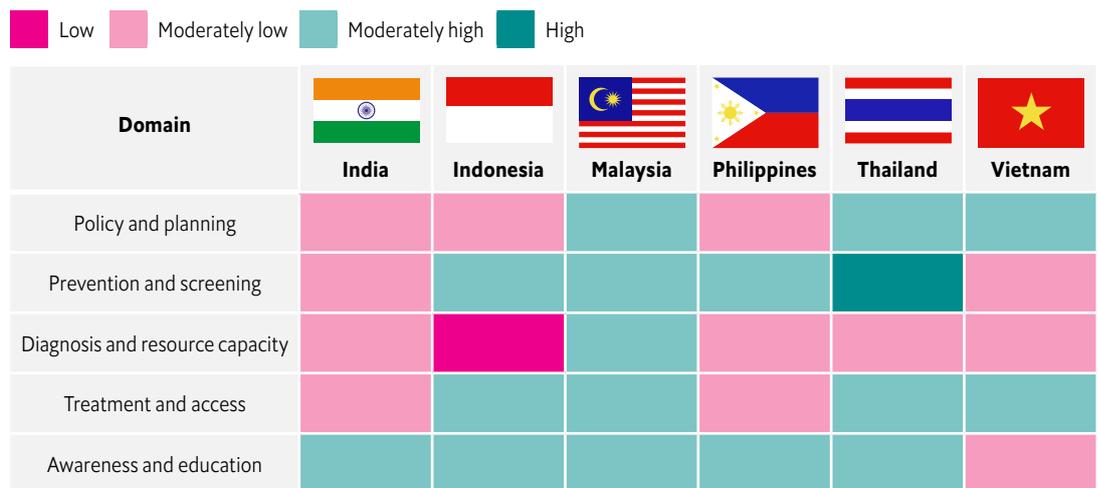
The COVID-19 pandemic impacted coverage of HPV vaccination in Australia, with a 11% drop in the national vaccination rates among school children between the years 2019 and 2020, and there are now extensive campaigns among the general public, school children and GPs to catch up with the vaccination schedule.<sup>166,167</sup>

Cancer incidence and mortality are also higher among indigenous, rural-dwelling and poorer Australians, and screening rates are also lower.<sup>168</sup> OOP payments are also a challenge for these populations, as they are for younger people and those with private insurance.<sup>169</sup> Even in wealthier countries that are relatively far down the track of tackling breast and cervical cancers, the work is never done.



# Conclusion: Impact and opportunity

Figure 4: Matrix of domain scores for all countries



Breast and cervical cancer incidence are on the rise in APAC, with significant expansion expected as a consequence of demographic transition. This benchmark and report identify a critical need, and significant opportunity, to tackle this challenge in the six countries assessed. Our overarching findings are as follows:

**There is a large and concerning variation in prevention and screening in the region, including inconsistent adoption of organised, population-based national immunisation and screening programmes, and gold-standard approaches such as HPV DNA testing and mammography.**

Expanding prevention and screening for breast and cervical cancer is of paramount importance given the demonstrable positive impact in terms of mortality, economic and productivity gains, and the social impact for women, their families and society. Among the countries in this study, Indonesia, Malaysia, Thailand and the Philippines have launched universal HPV vaccination programmes, while India and Vietnam have not.

Barriers to vaccination uptake in the region include lack of awareness and knowledge about the link to cervical cancer, stigma associated with the vaccine, and cost. The development of more affordable single-dose HPV vaccines could improve vaccination cost effectiveness for LMICs.<sup>170</sup>



The Covid-19 pandemic significantly undermined paediatric vaccination programmes in many countries. The Malaysian Ministry of Health estimates that 225,000 girls missed school-based HPV vaccination in 2020-21.<sup>171</sup> Countries urgently need to regain lost ground, and can take inspiration from initiatives such as Australia's catch-up programme.

Cervical cancer screening remains suboptimal. HPV DNA testing is the WHO-recommended, cost-effective gold standard but is not yet the screening method of choice in the majority of the countries studied.<sup>19</sup> Thailand offers an instructive lesson, having introduced HPV DNA testing as the primary cervical cancer screening method in 2020. In addition, there is too much of a reliance on opportunistic screening—all countries should move towards organised, population-based national-level HPV DNA screening, as well as ensuring the roll out of self-screening. Another challenge is uptake—as they roll out these comprehensive screening programmes, countries should seek to increase screening uptake through improved advocacy and education.

Screening measures for breast cancer, in particular, are lagging behind cervical cancer in some countries. For example, the Philippines and Vietnam do not have a national breast cancer screening programme, and awareness and use of CBE for screening is low.

The Philippines has the highest incidence of breast cancer among the six countries and one of the highest mortality rates, which may partly reflect the lack of screening. India may offer opportunities; it has introduced a community-based CBE screening programme operated by multipurpose health workers, and Thailand uses mobile mammography units to evaluate women with abnormal CBE.

### **Once a diagnosis of cancer is made, patients still face huge challenges to accessing care.**

The diagnosis and resource capacity domain scored the poorest in the region, mostly due to limited health system and workforce capacity. The relative inaccessibility of essential diagnostic services at the primary care level may lead to delayed diagnosis, and led to a dual healthcare system in some countries.<sup>172</sup> In Malaysia and the Philippines, for example, patients of higher socioeconomic status tend to access higher quality private services while those of lower socioeconomic standing access public services.<sup>173</sup> High costs of diagnostics compared to patient income levels are major barriers to access.<sup>47</sup>

Subsequent to diagnosis, most countries score better in the treatment and access domain, mostly due to comprehensive coverage for treatment in the public sector and high reimbursement rates for essential cancer drugs (India being the exception and, to a lesser extent, the Philippines).

Geographical challenges in the region are also immense, causing a large urban/rural divide in cancer care and increasing indirect costs for patients who need to travel from remote areas for care seeking. Digital health technologies could narrow the rural-urban divide, for instance through mobile health (m-health) modalities which can improve patient awareness, and through the development of diagnostic tools and clinical decision-making aids and telemedicine support, which could hasten the treatment pathway and offer support to physicians in peripheral institutions.

Another significant access-related challenge is the reliance on OOP payments in all countries, especially India and the Philippines. OOP payments are a major barrier to care and cause of catastrophic health expenditure. Access to lifesaving healthcare must not be compromised by the inability or reluctance of countries to fund it.

### Taking action

The goals set in the WHO's breast and cervical cancer strategies can only be reached if countries work quickly to improve the indicators included within our five-domain scorecard. We propose the following calls to action:

#### 1. Countries must demonstrate greater political will and leadership and implement and update national elimination plans and strategies to align with WHO targets for cervical and breast cancer

Women's cancers should be prioritised, with national elimination plans for cervical cancer and strategic plans for breast cancer designed and aligned with WHO guidance. For cervical cancer, countries should establish WHO-aligned national elimination plans. Of the six countries in this study, only Malaysia and Vietnam have done so. Such plans should have performance tracking metrics and be fully costed and funded. In the same way, tracked, costed and funded plans must be rolled out to ensure countries meet the WHO Breast Cancer Initiative.

National Cancer Control Plans should also be updated to include a focus on cervical cancer elimination and WHO-aligned strategies to tackle breast cancer. Again, these must be operationalised—with allocated resources—and tracked using defined metrics. National technical advisory groups, for instance a steering committee or technical working group could be established to monitor each country's progress towards implementing plans and strategies, and, ultimately, reaching the WHO targets for breast and cervical cancer.

Rwanda is a good example of how strong leadership as well as political and technical will can have a positive effect, even in a low-income country. It was the first African country to develop and implement a national strategic plan for cervical cancer prevention, care and control which was integrated into the national health system, and the first to implement a national HPV immunisation programme for girls in 2011. It is on the path to becoming one of the first countries to eliminate cervical cancer.<sup>174,175</sup>

"The main barriers to creating and implementing prevention and early detection policies are lack of sustainability and other government priorities," says Prof Dr Corazon A Ngelangel, president of the Philippine Cancer Society. Additionally, political will could be strengthened by greater emphasis on cross-regional collaboration. "If APAC countries continue to share resources and practice collaboration, this could improve outcomes across the region," says Prof Dr Ngelangel.

#### 2. Enhance performance tracking by building immunisation, screening and patient outcome registries for cervical and breast cancer

There are currently few efficient ways to track how policies, NCCPs and programmes are performing. Countries should put in place key performance indicators (KPIs) aligned to the WHO's cervical cancer elimination targets and breast cancer strategy, with mechanisms to measure performance of programmes and activities and track patient outcomes over time.

**"The main barriers to creating and implementing prevention and early detection policies are lack of sustainability and other government priorities. If APAC countries continue to share resources and practice collaboration, this could improve outcomes across the region."**

Prof Dr Corazon A Ngelangel, President of the Philippine Cancer Society

Immunisation, screening and patient outcome registries are vital tools which can track the success of prevention and treatment efforts and support research, planning and evaluation.

This may be a daunting prospect for some countries, especially given the complexity of implementing information systems even in wealthier countries. But countries should do what they can with the means available to them. "It's not always that we need a very highly sophisticated information system," says Dr Basu. "That has to be noted when we are thinking of the system-level challenges: whatever way [it is done], it is important to monitor the performance of health programmes."

**3. Focus on primary prevention by rolling out national immunisation programmes (HPV immunisation for cervical cancer) and secondary prevention by rolling out organised population-based national screening programmes (for both cervical and breast cancer)**

The WHO recommends that governments prioritise, implement and finance national immunisation programmes for HPV and organise population-based national screening programmes for both cervical and breast cancer. Preventing cancer is the most cost-effective action to save lives and reduce the burden on the health care system. This starts with primary prevention—immunisation, in the case of cervical cancer.

**“It's not always that we need a very highly sophisticated information system. That has to be noted when we are thinking of the system-level challenges: whatever way [it is done], it is important to monitor the performance of health programmes.”**

Dr Partha Basu, Branch Head, Early Detection Prevention and Infections Branch, International Agency for Research on Cancer (WHO)



Countries should build on existing progress in immunisation programmes by expanding coverage to span their entire geography, including across urban/rural and socioeconomic divides, and ensure high uptake. Currently, even when programmes are in place, HPV immunisation levels remain low.

The same is true for breast and cervical cancer screening. For cervical cancer, HPV DNA testing is superior to conventional cytology and VIA testing in reducing incidence and should be encouraged, as should the introduction of self-screening.<sup>19</sup> For breast cancer, organised population-based mammography screening programmes have been shown to reduce mortality, and though not suggested in countries with weaker health systems, this type of screening should be considered for high-risk populations.

Awareness, education and advocacy are an important step, and key to building and sustaining effective prevention programmes.

#### **4. Referral and treatment pathways for patients should be clear and well defined**

Once a diagnosis is made, guidance on the processes of referral and linkage to care and treatment services should be well defined, timely, and organised. Roles and responsibilities, tools for referral, and navigation should be clearly outlined to ensure early access and appropriate support, increase trust and improve outcomes. Better and more well-defined referral and treatment pathways would also facilitate stronger shared decision making across multi-disciplinary teams.

#### **5. Governments should prioritise women's cancers as key policy areas to achieve national targets for immunisation, screening and treatment**

Increasing fiscal space for women's cancers can have a significant impact on policy prioritisation and the ability of governments to achieve their targets. Governments should also commit to sustained, long-term funding, via UHC packages and local budgets, to finance prevention, screening and treatment of both cancers. A wider prioritisation of health relies on countries increasing the relatively small proportion of GDP spent on health.

#### **6. Governments and global funding bodies should devise and implement effective and sustainable funding models**

Given the relatively limited investments the study countries currently spend on breast and cervical cancer, governments could consider new funding models, including catalytic grants and multilateral agency loans, to accelerate progress. The key stakeholders to involve are global funding organisations, foundations, development agencies and multilateral banks

(including the WHO, World Bank, Unitaaid, PEPFAR). Catalytic funding, impact investing and innovative payment models will all be key.

Global funders, foundations, development agencies and multilateral banks need to do more for cervical cancer and breast cancer by creating a strategy for allocation and funding, and working with the governments in these countries. With all of these options, the aim must be long-term continuity.

#### **7. Services and programmes should be patient-centric and tailored to the needs of affected populations in different settings**

The APAC region is diverse in terms of population and settings, whether urban, rural, or remote. Especially where costs are strained, countries must take a holistic approach to targeting and implementing programmes.

"In Thailand, we have a few organizations that provide breast cancer screening, for instance providing mammograms in rural areas, but this is not always cost-effective," says Assoc Prof Napa Parinyanitikul of the Medical Oncology Unit, Department of Medicine, Faculty of Medicine at Chulalongkorn University and King Chulalongkorn Memorial Hospital.

"We need to rethink how to approach screening in rural areas, and may need to think about focusing more on high-risk populations."

All approaches must be sensitive to the varied settings in which they must operate. For example, centralised screening, immunisation and treatment will work best in urban and peri-urban settings, and will bring scale to national screening ambitions and accelerate the march towards national targets.

Decentralised approaches however could be more appropriate in rural and remote areas.

**"We need to rethink how to approach screening in rural areas, and may need to think about focusing more on high-risk populations."**

Assoc Prof Napa Parinyanitikul, Medical Oncology Unit, Department of Medicine, Faculty of Medicine, Chulalongkorn University and King Chulalongkorn Memorial Hospital, Thailand

### 8. Consider integrated, holistic approaches to tackle resource and capacity challenges

While prevention and screening are important first steps, it is also critical to ensure countries have the capacity to diagnose and treat patients. Due to limited infrastructure and funding, workforce and technical capacity are both problems in the region. Integrated approaches—such as combining HIV and cervical cancer programmes, including female cancer services into existing family planning programmes, or conducting simple breast examinations alongside other healthcare interactions—can overcome shortfalls in time, capacity and workforce.

Countries can also work to improve access to specialist facilities, particularly for poorer people, be it in rural or urban populations. “Comprehensive cancer centres have better outcomes, as all the facilities for diagnosis

(imaging and pathology) and treatment (radiotherapy, systemic treatment and surgery) are in one place and multi-disciplinary care is possible,” says Dr Soo-Hwang Teo, Chief Scientific Officer at Cancer Research Malaysia. “In addition, patient navigation programmes which bring together public-private partnerships are effective in ensuring timely access to diagnosis and treatment of cancers.”

Delivering the necessary infrastructure to tackle the growing burden of cancer in emerging economies requires a broad approach.

This includes the development of robust national cancer control programmes, appropriate implementation, and adoption of state-of-the-art recommendations into national clinical guidelines for screening, diagnosis and treatment, and expansion of registries to cover larger swathes of the population to accurately assess diagnosis and treatment outcomes. National immunisation and organised, population-based national screening programmes must be a central tenet of national cancer control programmes, as should sustainable, long-term resource allocation and funding for such programmes.

Furthermore, appropriate allocation of government funding and support from catalytic external funding is of paramount importance. The role of patient organizations in improving awareness and advocacy efforts also cannot be overstated. With these measures in place, emerging economies in Asia Pacific will be better positioned to tackle the growing burden of breast and cervical cancer—as well as a range of other health challenges.



# Appendices

## Methods

This research consisted of a benchmarking exercise which scored policies, programmes, guidelines and approaches to care for cervical and breast cancer in the APAC region, specifically in India, Indonesia, Malaysia, the Philippines, Thailand and Vietnam.

An initial literature review, conducted within indexed databases (MEDLINE, Embase and the Cochrane library) and grey literature (such as policy documents), identified existing policy frameworks and assessments that have been previously used to prioritise policy approaches for the prevention and control of women's cancers in a range of countries, and explored the current burden and landscape in the countries of focus, including what policies and programmes are currently in place. The search covered over 4000 studies, which were prioritised based on relevance and grouped into thematic areas. Through analysis of articles, we derived a draft set of indicators and sub-domains organised across five domains, that could be used to benchmark policies and programmes related to breast and cervical cancer in the region and identify opportunities for improvement. The focus of the research programme is not to rank countries but rather to identify opportunities to improve patient outcomes in each country.

The scorecard was additionally informed by an advisory board and interviews, which reviewed and advised on the development of the indicator framework and the domains chosen. Out of this process, we identified a set of 23 novel indicators, which were used to evaluate each selected country across five domains. We created a scoring structure, then researched and scored countries. A range of international and national sources were used for the data collection, and both primary and secondary research was used to populate the country scorecard. Each indicator is scored individually, as each has its own distinct scoring range (e.g. 0-5, 0-10). A key was then developed, where for each indicator the score will range from low to moderately low to moderately high to high. Scoring judgements were made based on the best publicly available information available. Because of the nature of scoring, where complex matters are converted to simple scores, we note that not all readers will agree with all scores. Additionally in some instances, publicly available supporting information could not be found. Economist Impact retained editorial independence throughout the process.

## The Scorecard

Domain	Sub domain	Scoring criteria
1. Policy and planning	1 Cancer control plan	<p><b>Operational national cancer control plan</b> 1 = operational national cancer control plan exists</p> <p><b>Currency of cancer control plan</b> 1 = cancer control plan was updated within the last 5 years 2 = cancer control plan was updated within the last 2 years</p> <p><b>Breast cancer specific plan, or a breast cancer strategy plan</b> 1 = breast cancer specific plan exists</p> <p><b>Cervical cancer elimination plan</b> 1 = cervical cancer elimination plan exists</p>
	2 Comprehensiveness	<p><b>Prevention</b> 1 = cancer control plan includes goals, objectives and priority evidence-based interventions in relation to prevention</p> <p><b>Early detection and diagnosis</b> 1 = cancer control plan includes goals, objectives and priority evidence-based interventions in relation to early detection and diagnosis</p> <p><b>Treatment</b> 1 = cancer control plan includes goals, objectives and priority evidence-based interventions in relation to treatment</p> <p><b>Palliative care</b> 1 = cancer control plan includes goals, objectives and priority evidence-based interventions in relation to palliative care</p> <p><b>Survivorship</b> 1 = cancer control plan includes goals, objectives and priority evidence-based interventions in relation to survivorship</p>
	3 Implementation plan	<p><b>Implementation plan</b> 1 = cancer control plan includes an implementation plan</p> <p><b>Goals</b> 1 = cancer control plan includes goals with measurable short, medium and long-term objectives</p> <p><b>Targets</b> 1 = cancer control plan includes explicit targets for reaching cervical cancer elimination by 2030 across strategy components (e.g. 90-70-90 targets)</p> <p><b>Surveillance for cervical cancer control</b> 1 = plans are in place to establish national or sub-national long-term surveillance system to monitor effectiveness and impact of broad interventions and activities implemented for cervical cancer control 2 = a national or sub-national long-term surveillance system exists to monitor effectiveness and impact of broad interventions and activities implemented for cervical cancer control</p> <p><b>Surveillance for breast cancer control</b> 1 = plans are in place to establish national or sub-national long-term surveillance system to monitor effectiveness and impact of broad interventions and activities implemented for breast cancer control 2 = a national or sub-national long-term surveillance system exists to monitor effectiveness and impact of broad interventions and activities implemented for breast cancer control</p>
	4 Population-based cancer registry	<p><b>PBCR</b> 1 = regional PBCR exists 2 = national PBCR exists</p> <p><b>Cervical cancer PBCR</b> 1 = cervical cancer PBCR exists</p> <p><b>Breast cancer PBCR</b> 1 = breast cancer PBCR exists</p> <p><b>Linkage</b> 1 = PBCR is linked with other health information systems</p> <p><b>Quality</b> 1 = PBCR covers &gt;10% of the national population 2 = PBCR covers &gt;20% of the national population</p>
	5 Cervical cancer clinical guidelines	<p><b>Guidelines exist</b> 1 = national evidence-based cervical cancer clinical guidelines exist</p> <p><b>Currency of guidelines</b> 1 = guidelines were updated within the last 5 years 2 = guidelines were updated within the last 2 years</p>
	6 Breast cancer clinical guidelines	<p><b>Guidelines exist</b> 1 = national evidence-based breast cancer clinical guidelines exist</p> <p><b>Currency of guidelines</b> 1 = guidelines were updated within the last 5 years 2 = guidelines were updated within the last 2 years</p>

Domain	Sub domain	Scoring criteria
2. Prevention and screening	7 HPV vaccination programme	<p><b>Vaccination programme</b> 1 = restricted (to certain regions) HPV vaccination exists 2 = national HPV vaccination included in national immunisation plan</p> <p><b>Uptake</b> 1 = medium coverage for vaccinations for target population (20-50%) 2 = high coverage for vaccinations for target population (&gt;50%)</p> <p><b>Funding</b> 1 = HPV vaccination programme is partially funded/reimbursed 2 = HPV vaccination programme is fully funded/reimbursed</p> <p><b>WHO recommendations</b> 1 = guidelines for HPV vaccination are in line with WHO recommendations (one or two-dose schedule for girls aged 9-14 years)</p>
	8 Cervical cancer screening programme	<p><b>Opportunistic screening programme</b> 1 = existence of opportunistic screening programme at local / state / provincial levels 2 = existence of opportunistic screening programme at the public primary health care level</p> <p><b>Organised, population-based screening programme</b> 1 = existence of organised, population-based screening programme at local / state / provincial levels 2 = existence of organised, population-based screening programme at the public primary health care level</p> <p><b>Screening registry</b> 1 = screening registry exists 2 = screening registry identifies women eligible for screening 3 = screening registry tracks women's history of screening</p> <p><b>Self-sampling HPV testing</b> 1 = existence of pilot studies of self-sampling HPV testing 2 = self-sampling HPV testing exists as part of the cervical cancer screening programme</p> <p><b>Screening test</b> 1 = VIA or cytology is used as the primary screening test 2 = HPV DNA screening is used as the primary screening test</p> <p><b>Uptake</b> 1 = screening uptake is between 30-50% 2 = screening uptake is &gt;50%</p> <p><b>Funding</b> 1 = cervical cancer screening is partially funded/reimbursed 2 = cervical cancer screening is fully funded/reimbursed</p> <p><b>WHO recommendations</b> 1 = guidelines for screening are in line with WHO recommendations (organised HPV DNA screening starting at age 30 with regular screening every 5 to 10 years)</p>
	9 Breast cancer screening programme	<p><b>Opportunistic screening programme</b> 1 = existence of opportunistic screening programme at local / state / provincial levels 2 = existence of opportunistic screening programme at the public primary health care level</p> <p><b>Organised, population-based screening programme</b> 1 = existence of organised, population-based screening programme at local / state / provincial levels 2 = existence of organised, population-based screening programme at the public primary health care level</p> <p><b>Uptake</b> 1 = screening uptake is between 30-50% 2 = screening uptake is &gt;50%</p> <p><b>CBE</b> 1 = use of CBE at the public primary health care level</p> <p><b>Mammography</b> 1 = use of mammography at the public primary health care level</p> <p><b>Funding</b> 1 = cervical cancer screening is partially funded/reimbursed 2 = cervical cancer screening is fully funded/reimbursed</p>

Domain	Sub domain	Scoring criteria
3. Diagnosis and resource capacity	10 Cervical cancer guidelines	<p><b>Diagnosis</b> 1 = guidelines cover diagnosis</p> <p><b>Intervals</b> 1 = guidelines include recommendation and/or a target for the interval between diagnosis and initial treatment</p> <p><b>Patient navigation programme</b> 1 = guidelines include patient navigation programme to help promote access to timely diagnosis and treatment</p> <p><b>Referral system</b> 1 = clearly defined referral system exists from primary care to secondary and tertiary care</p> <p><b>Linkage to programmes</b> 1 = established programmes exist linking individuals who have been diagnosed with HPV with prevention, treatment, and care resources</p>
	11 Breast cancer guidelines	<p><b>Diagnosis</b> 1 = guidelines cover diagnosis</p> <p><b>Intervals</b> 1 = guidelines include recommendation and/or a target for the interval between diagnosis and initial treatment</p> <p><b>Patient navigation programme</b> 1 = guidelines include patient navigation programme to help promote access to timely diagnosis and treatment</p>
	12 Access to services in the public sector	<p><b>Biomarker testing</b> 1 = access in the public sector</p> <p><b>Next generation sequencing</b> 1 = access in the public sector</p> <p><b>CT scanning</b> 1 = access in the public sector</p> <p><b>Biopsy</b> 1 = access in the public sector</p> <p><b>Diagnostic mammography</b> 1 = access in the public sector</p> <p><b>Genetic testing (e.g. BRCA)</b> 1 = access in the public sector</p>
	13 Health system capacity	<p><b>Radiotherapy machines</b> 1 = 5-10 external beam radiotherapy machines per 10,000 cancer patients 2 = &gt; 10 external beam radiotherapy machines per 10,000 cancer patients</p> <p><b>Mammography</b> 1 = 20-50 mammograms per 10,000 cancer patients 2 = &gt; 50 mammograms per 10,000 cancer patients</p> <p><b>CT scanners</b> 1 = 20-50 CT scanners per 10,000 cancer patients 2 = &gt; 50 CT scanners per 10,000 cancer patients</p> <p><b>MRI scanners</b> 1 = 5-10 MRI scanners per 10,000 cancer patients 2 = &gt; 10 MRI scanners per 10,000 cancer patients</p>
	14 Workforce	<p><b>Radiologists</b> 1 = 100-200 radiologists per 10,000 cancer patients 2 = &gt; 200 radiologists per 10,000 cancer patients</p> <p><b>Radiation oncologists</b> 1 = 2-5 radiation oncologists per 10,000 cancer patients 2 = &gt; 5 radiation oncologists per 10,000 cancer patients</p> <p><b>Surgeons</b> 1 = 200-500 surgeons per 10,000 cancer patients 2 = &gt; 500 surgeons per 10,000 cancer patients</p>

Domain	Sub domain	Scoring criteria
4. Treatment and access	15 Cervical cancer guidelines	<p><b>Treatment</b> 1 = guidelines cover treatment</p> <p><b>Shared decision making</b> 1 = guidelines cover shared decision making</p> <p><b>Multidisciplinary team</b> 1 = guidelines recommend treatment by multidisciplinary team</p> <p><b>Supportive/palliative care</b> 1 = guidelines include referral pathway to supportive / palliative care services</p>
	16 Breast cancer guidelines	<p><b>Treatment</b> 1 = guidelines cover treatment</p> <p><b>Shared decision making</b> 1 = guidelines cover shared decision making</p> <p><b>Multidisciplinary team</b> 1 = guidelines recommend treatment by multidisciplinary team</p> <p><b>Supportive/palliative care</b> 1 = guidelines include referral pathway to supportive / palliative care services</p>
	17 Access to services in the public sector	<p><b>Surgery</b> 1 = access in the public sector</p> <p><b>Radiotherapy</b> 1 = access in the public sector</p> <p><b>Fertility preservation</b> 1 = access in the public sector</p> <p><b>Breast reconstruction</b> 1 = access in the public sector</p> <p><b>Surveillance for recurrence</b> 1 = access in the public sector</p> <p><b>Rehabilitation</b> 1 = access in the public sector</p> <p><b>Psychosocial/mental health support</b> 1 = access in the public sector</p> <p><b>Palliative/hospice care</b> 1 = access in the public sector</p>
	18 Cervical cancer drugs	<p><b>Drugs on the WHO list</b> 1 = all (100%) of the cervical cancer drugs listed on the WHO Essential Cancer Drug List of 2021 are included in the most current national essential drugs list</p> <p><b>Funding</b> 1 = some drugs included in the WHO essential meds list for cervical cancer are funded/reimbursed 2 = all drugs included in the WHO essential meds list for cervical cancer are fully funded/reimbursed</p> <p><b>Drugs beyond WHO list</b> 1 = availability of drugs for cervical cancer beyond the WHO Essential Cancer Drug List 2 = innovative drugs are fully funded/reimbursed</p>
	19 Breast cancer drugs	<p><b>Drugs on the WHO list</b> 1 = all (100%) of the breast cancer drugs listed on the WHO Essential Cancer Drug List of 2021 are included in the most current national essential drugs list</p> <p><b>Funding</b> 1 = some drugs included in the WHO essential meds list for breast cancer are funded/reimbursed 2 = all drugs included in the WHO essential meds list for breast cancer are fully funded/reimbursed</p> <p><b>Drugs beyond WHO list</b> 1 = availability of drugs for breast cancer beyond the WHO Essential Cancer Drug List 2 = innovative drugs are fully funded/reimbursed</p>

Domain	Sub domain	Scoring criteria
5. Awareness and education	20 Cervical cancer patient engagement	<p><b>Patient organisations</b> 1 = one or more independent patient organisations which cover cervical cancer exist</p> <p><b>Contributions for guidelines</b> 1 = one or more patient organisations which cover cervical cancer are listed as contributors in clinical guidelines</p> <p><b>Participation in cancer control plan</b> 1 = one or more patient organisations which cover cervical cancer participate in developing the National Cancer Control Plan</p> <p><b>Collaborations / joint programmes</b> 1 = collaborations and joint programmes exist between patient groups and policy groups/ministries</p>
	21 Cervical cancer educational initiatives	<p><b>Education programmes</b> 1 = educative programmes for cervical cancer exist run by civil society 2 = educative programmes for cervical cancer exist run by the government</p> <p><b>Mechanisms for effectiveness</b> 1 = educational programmes include a mechanism to determine their effectiveness (reaching their intended audience, measuring screening uptake, increase in referral rates etc.)</p> <p><b>Length of programmes</b> 1 = educative programmes have been in existence for over 5 years 2 = educative programmes have been in existence for over 10 years</p> <p><b>Community-based outreach</b> 1 = existence of at least one community based outreach services programme for cervical cancer (awareness campaign) run by civil society 2 = existence of at least one community based outreach services programme for cervical cancer (awareness campaign) run by the government</p> <p><b>Educational programmes for providers</b> 1 = clinical cervical cancer educational programmes targeted towards providers exist</p> <p><b>Integration</b> 1 = education and awareness programmes for cervical cancer are integrated into primary health care settings</p>
	22 Breast cancer patient engagement	<p><b>Patient organisations</b> 1 = one or more independent patient organisations which cover breast cancer exist</p> <p><b>Contributions for guidelines</b> 1 = one or more patient organisations which cover breast cancer are listed as contributors in clinical guidelines</p> <p><b>Participation in cancer control plan</b> 1 = one or more patient organisations which cover breast cancer participate in developing the National Cancer Control Plan</p> <p><b>Collaborations / joint programmes</b> 1 = collaborations and joint programmes exist between patient groups and policy groups/ministries</p>
	23 Breast cancer educational initiatives	<p><b>Education programmes</b> 1 = educative programmes for breast cancer exist run by civil society 2 = educative programmes for breast cancer exist run by the government</p> <p><b>Mechanisms for effectiveness</b> 1 = educational programmes include a mechanism to determine their effectiveness (reaching their intended audience, measuring screening uptake, increase in referral rates etc.)</p> <p><b>Length of programmes</b> 1 = educative programmes have been in existence for over 5 years 2 = educative programmes have been in existence for over 10 years</p> <p><b>Community-based outreach</b> 1 = existence of at least one community based outreach services programme for breast cancer (awareness campaign) run by civil society 2 = existence of at least one community based outreach services programme for breast cancer (awareness campaign) run by the government</p> <p><b>Educational programmes for providers</b> 1 = clinical breast cancer educational programmes targeted towards providers exist</p> <p><b>Integration</b> 1 = education and awareness programmes for breast cancer are integrated into primary health care settings</p>

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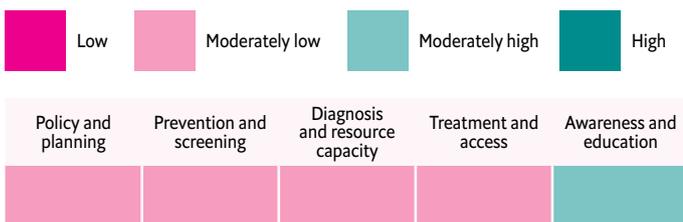
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## Women's cancer country snapshot India

India scores moderately low in four domains and moderately high in only one, awareness and education, showing that there is scope for improvement at all levels.



### Top opportunities for improvement in India

#### 1. Roll out a dedicated national elimination plan for cervical cancer and a national strategy for breast cancer in line with World Health Organisation (WHO) ambitions and targets

- To aid with the implementation of cancer policy, a national elimination plan for cervical cancer and a national strategy for breast cancer could be established, which include specific targets and goals for prevention (for cervical cancer), screening, diagnosis and treatment.
- To support their development, help achieve elimination of cervical cancer and meet WHO numbers for breast cancer, more government priority could be given to women's cancers as key policy areas, by expanding the fiscal space for these cancers and including implementation and additional services under local budgets.
- A national steering committee could be established to operationalise inter-governmental ministry coordination to help drive the national elimination plan for cervical cancer and the national strategy for breast cancer.

#### 2. Establish a national human papillomavirus (HPV) immunisation programme for cervical cancer prevention

- Introducing HPV vaccination as part of India's routine immunisation programme for girls aged 9-14 years would help meet the WHO's 2030 target of vaccinating 90% of girls by the age of 15.
- Monitoring systems and vaccination registers could be introduced to help ensure that high coverage for vaccination is met, though barriers will need to be addressed for instance affordability and access, but also awareness, knowledge, and the stigma that is associated with the vaccine.<sup>1</sup>



**3. Operationalise and roll out organised, population-based national screening programmes in line with WHO recommendations**

- For cervical cancer, screening through HPV DNA testing is the recommended primary screening tool in all settings due to its high sensitivity, and the country would do well to transition away from using visual inspection under acetic acid (VIA), in line with recommendations by the WHO. Screening programmes could also be better steered towards being organised and population-based at the national level, and HPV self-sampling could be introduced as an option, especially for women living in rural or hard-to-reach areas.
- For breast cancer, to help ensure high screening coverage of women especially those in the at-risk age group (which is currently extremely low), an organised, population-based national breast cancer screening programme could be introduced, including mammography screening for high-risk women. This would help make sure the right women are targeted and diagnosed early.

**4. Increase access to diagnostic equipment and treatment modalities and explore alternative funding mechanisms to drive down out-of-pocket (OOP) spending**

- To ensure no patients are denied a diagnosis, accessibility to diagnostic services (for instance mammography and CT scanning), could be expanded under public healthcare and service delivery could be more organised, efficient, timely, and integrated into primary care.
- As a result of limited public-sector access, there is a high reliance in India on OOP payments, which drives catastrophic health spending.<sup>2</sup> One study found that 40% of cancer hospitalization cases in India were financed mainly through borrowings, sale of assets and contributions from friends and relatives.<sup>3</sup> There is therefore room in India to expand access to treatment, through increased reimbursement.
- The country could build on its strong track record and explore alternative funding mechanisms beyond national health spending, for instance through grants and targeted funding by global donors, development agencies, and multilateral banks.

**5. Roll out national awareness campaigns for breast and cervical cancer**

- The country's strongest area is awareness and education, a longstanding focus dating back to initial efforts in the 1950s. Educational initiatives for both cancers score highly, while patient engagement efforts receive moderately high scores.
- To improve scores in this area, national, government-led awareness campaigns and outreach programmes could be rolled out, and collaboration between patient groups and ministries could be improved.

## Women's cancer country snapshot: India



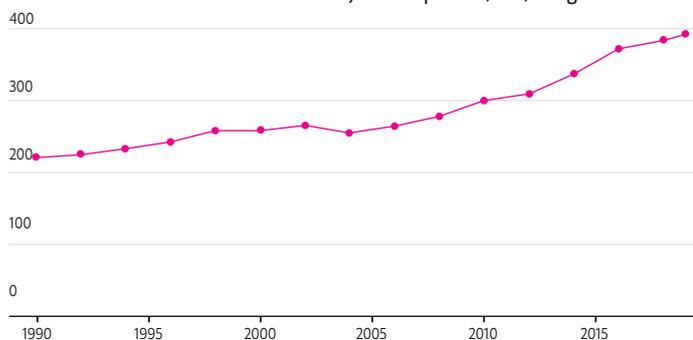
### Burden, incidence and mortality in India

Breast cancer			
	India	Asia	World
Age-standardised incidence per 100 000 women (2020)	25.8	36.8	47.8
Age-standardised mortality per 100 000 women (2020)	13.3	11.9	13.6
Cumulative risk of breast cancer, ages 0-74 (2020)	2.81	3.98	5.2

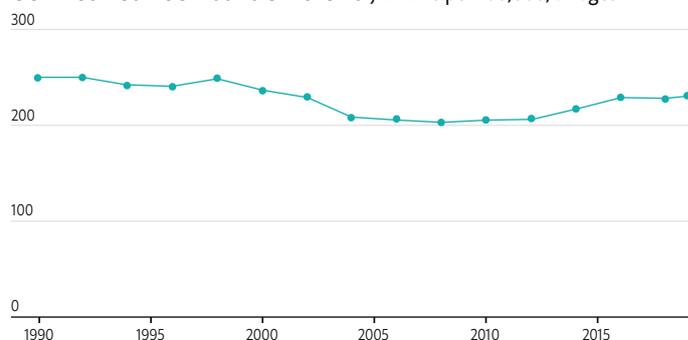
Source: Globocan 2020\*

Cervical cancer			
	India	Asia	World
Age-standardised incidence per 100 000 women (2020)	18.0	12.7	13.3
Age-standardised mortality per 100 000 women (2020)	11.4	7.1	7.3
Cumulative risk of cervical cancer, ages 0-74 (2020)	2.01	1.35	1.39

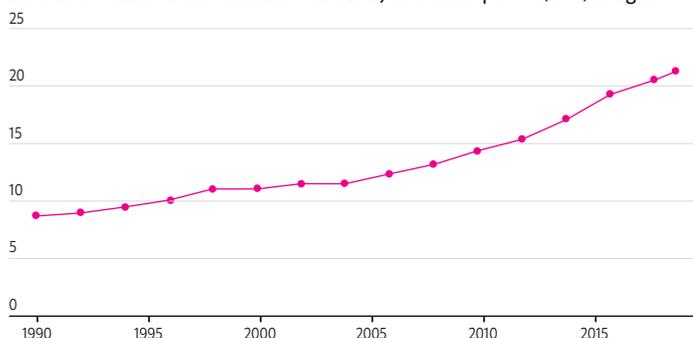
#### Breast cancer burden trend, DALY's per 100,000, all ages



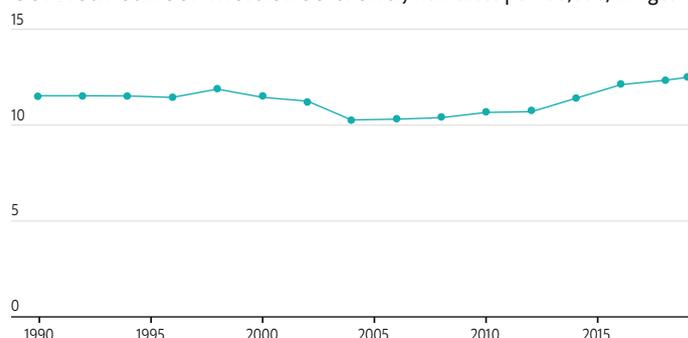
#### Cervical cancer burden trend, DALY's per 100,000, all ages



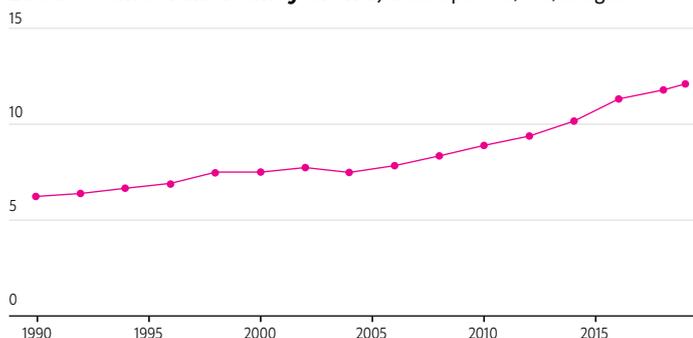
#### Breast cancer incidence trend, new cases per 100,000, all ages



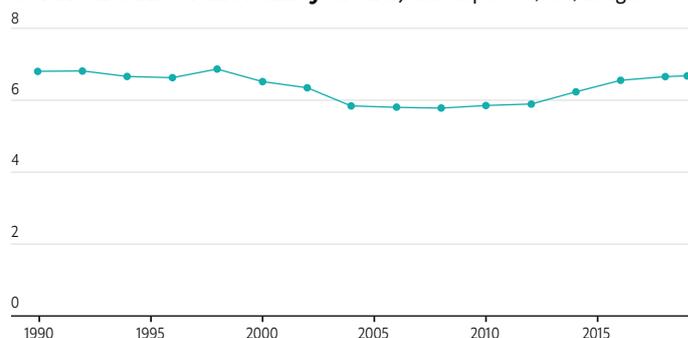
#### Cervical cancer incidence trend, new cases per 100,000, all ages



#### Breast cancer mortality trend, deaths per 100,000, all ages



#### Cervical cancer mortality trend, deaths per 100,000, all ages



Source: Global Burden of Disease, 2019<sup>5</sup>



## Scorecard results

Indicator	Range	Score	Justification		
<b>Domain 1: Policy and planning</b>					
1	Cancer control plan	0-5	1	+1	The National Cancer Control Programme (NCCP) was launched in 1975 to prevent and control cancer. It merged with the non communicable diseases (NCD) programme in 2008 to give rise to the National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular disease and Stroke (NPCDCS). <sup>6,7</sup>
				+0	There have been many updates, including a 2021 framework for telemedicine use in the management of cancer, diabetes, cardiovascular disease and stroke, though there is no evidence of a full review. <sup>8</sup> The Operational Framework Management of Common Cancers was last updated in 2016. <sup>9</sup>
				+0	There is no evidence of a specific elimination plan for cervical cancer or dedicated strategy solely for breast cancer.
2	Comprehensiveness	0-5	3	+3	The NPCDCS includes goals and objectives in relation to prevention, early detection and diagnosis and treatment, but there is no evidence of goals regarding palliative care and survivorship. <sup>6</sup>
3	Implementation plan	0-7	1	+1	The NPCDCS mentions an implementation plan through the regular health system supported by the District NCD cell for planning, monitoring and reporting. However there is no evidence of a long-term surveillance system to monitor effectiveness and impact of interventions and activities for cervical or breast cancer control.
				+0	Evidence could not be found of the NPCDCS containing specific goals with measurable short, medium and long-term objectives. Evidence could not be found of any explicit targets to meet by 2030 to help reach cervical cancer elimination.
4	Population-based cancer registry	0-7	4	+2	The Indian Council of Medical Research performs national systematic collection of cancer data through Population-Based Cancer Registries (PBCRs) and Hospital-Based Cancer Registries (HBCRs). <sup>10</sup>
				+1	PBCRs collect data on all new cases of cancer occurring in populations from multiple sources of registrations such as Government Hospitals, Private Hospitals, Nursing Homes, Clinics etc. <sup>11</sup>
				+1	India's network of PBCRs is estimated to cover less than 15% of the urban population and less than 1% of the rural population. <sup>12</sup>
				+0	There is no breast cancer or cervical cancer specific PBCR.
5	Cervical cancer clinical guidelines	0-3	2	+2	The National Cancer Grid (NCG) of India released updated Consensus Guidelines on the Management of Cervical Cancer in 2018. <sup>13</sup>
6	Breast cancer clinical guidelines	0-3	2	+2	NCG Breast Cancer management guidelines were last updated in 2019. <sup>14</sup>
<b>Domain 2: Prevention and screening</b>					
7	HPV vaccination programme	0-7	3	+1	HPV vaccination is not included in the national vaccination schedule. <sup>15</sup> There are some state-wide vaccination programmes that have been implemented (Punjab and Sikkim). <sup>16</sup> Note: in late 2023, the Health Ministry plans to roll out the HPV vaccine against cervical cancer as part of its National Immunisation Programme. <sup>17</sup>
				+2	Since HPV vaccination is not universal, national coverage is low though evidence could not be found of numbers. Sikkim, where the vaccination was introduced, achieved >95% vaccination coverage. <sup>16</sup> Where it is available, it is funded by the government, and when introduced nationally, will be funded by the Government and distributed via state-run services. <sup>18</sup>
				+0	Guidelines are not in line with WHO recommendations as there is currently no national recommendations for a vaccination schedule.
8	Cervical cancer screening programme	0-16	6	+2	An opportunistic programme for cervical cancer screening exists at the public primary health care level, but no organised programme.
				+1	HPV self-sampling is not part of the cervical cancer screening programme, but is being tested by various institutes and hospitals in India to find out the acceptance among women and its efficiency. <sup>19</sup>
				+1	Visual inspection under acetic acid (VIA) testing is the screening method outlined in the government's operation framework for cervical cancer screening. <sup>9</sup>
				+2	Cervical cancer screening is part of the NPCDCS programme delivered at Wellness centres and covered by the Ayushman Bharat Scheme of the MoHFW. <sup>20</sup>
				+0	There is no evidence that a screening registry exists.
				+0	The National Family Health Survey (fifth round, 2019–2021) has reported that 1.9% of women aged 30–49 years have ever undergone cervical cancer screening. <sup>21</sup>
9	Breast cancer screening programme	0-10	5	+2	An opportunistic screening programme for breast cancer exists at the public primary health care level, but no organised programme.
				+1	The Operational Framework for Management of Common Cancers lists Clinical Breast Examination (CBE) as the primary screening method. <sup>9</sup>
				+2	Breast cancer screening is part of the NPCDCS programme delivered at Wellness centres and covered by the Ayushman Bharat Scheme of the MoHFW. <sup>20</sup>
				+0	The National Family Health Survey (fifth round, 2019–2021) has reported that just 0.9% of women aged 30–49 years have ever undergone breast cancer screening. <sup>14</sup>



## Scorecard results

**Indicator**                      **Range**   **Score**   **Justification**

### Domain 3: Diagnosis and resource capacity

10	Cervical cancer guidelines	0-5	3	+1	Guidelines cover diagnosis. <sup>13</sup>
				+0	There is no evidence that guidelines include recommendations for the interval between diagnosis and initial treatment or include information on patient navigation procedures.
				+2	There is a clearly defined referral system for movement from primary care to secondary and tertiary care and an established programme linking individuals who have been diagnosed with HPV with prevention, treatment, and care resources. <sup>15</sup>
11	Breast cancer guidelines	0-3	1	+1	Guidelines cover diagnosis. <sup>14</sup>
				+0	There is no evidence that guidelines include recommendations for the interval between diagnosis and initial treatment or include information on patient navigation procedures.
12	Access to services in the public sector	0-6	0	+0	While there are funds available to provide diagnostic services to poorer people (e.g. mammography and CT scanning), these are not generally available under public healthcare. <sup>22</sup>
13	Health system capacity	0-8	6	+6	Per 10,000 cancer patients, India has 5.4 external beam radiotherapy machines, 23.3 mammograms, 73.4 CT scanners and 17.5 MRI scanners. <sup>23</sup>
14	Workforce	0-6	4	+4	Per 10,000 cancer patients, India has 346 radiologists, 3 radiation oncologists and 273 surgeons. <sup>15</sup>

### Domain 4: Treatment and access

15	Cervical cancer guidelines	0-4	3	+3	Cervical cancer guidelines cover treatment, recommend treatment by a multidisciplinary team, and include a referral pathway to supportive or palliative care services. <sup>24,13</sup> Though it is stated that the guidelines can be used to improve communication and shared decision-making between healthcare providers and patients, it is not outlined as a recommendation.
16	Breast cancer guidelines	0-4	3	+3	Breast cancer guidelines cover treatment, shared decision making, and include a referral pathway to supportive or palliative care services, but there is no evidence of recommending treatment by a multidisciplinary team. <sup>14</sup>
17	Access to services in the public sector	0-8	4	+4	Under the NCCP, surgery, radiotherapy, rehabilitation, and palliative or hospice care are available in the public sector. There is no evidence of psychosocial or mental health support, fertility preservation, breast reconstruction or surveillance for recurrence being available in the public sector. <sup>25,26</sup>
18	Cervical cancer drugs	0-5	2	+2	All cervical cancer drugs listed on the WHO Essential Cancer Drug List of 2021 (carboplatin, cisplatin and paclitaxel) are included in the Indian National Essential Medicines List of 2022 though they are not all fully reimbursed. There is no evidence of innovative drugs beyond this list being available. <sup>27,28</sup>
19	Breast cancer drugs	0-5	1	+1	Not all breast cancer drugs listed on the WHO Essential Cancer Drug List of 2021 are included in the Indian National Essential Medicines List of 2022 (e.g. Vinorelbine). Included drugs are not all fully reimbursed. There is no evidence of innovative drugs beyond this list being available. <sup>27,28</sup>

### Domain 5: Awareness and education

20	Cervical cancer patient engagement	0-4	3	+1	The Indian Cancer Society provides support to cervical cancer patients. <sup>29</sup> The National Institute of Cancer Prevention and Research (NICPR) also releases campaign material and media outreach at periodic intervals.
				+2	The NCG, a network of cancer centres, institutes, and patient groups collaborates with the Indian government to enhance cancer care. Patient groups contribute to the development of the NCDCS as part of the NCG. However there is no evidence that they contribute to the clinical guidelines for cervical cancer. <sup>30</sup>
21	Cervical cancer educational initiatives	0-9	7	+6	The Indian Cancer Society (since 1951) offers education and support, and tracks their successes in education, awareness etc. in an annual report. <sup>31</sup> The Cancer Awareness, Prevention and Early Detection Trust (CAPED) helps raise awareness on cervical cancer through community outreach but there is no evidence of government run educational initiatives. <sup>32</sup> Trained frontline workers such as Accredited social health activists (ASHAs) provide prevention, control & screening services linked with referral support and continuity of care and have an important role in community outreach activity and health education. The Operational guidelines for prevention, screening and control of non-communicable diseases (including cervical cancer) contain information about awareness raising activities. <sup>33</sup> However there is no evidence that education and awareness programmes for cervical cancer are integrated into primary health care settings.
				+1	The NPCDCS has a training module for medical officers for prevention, control and population level screening of cervical cancer <sup>34</sup> and the NICPR provides capacity building on cancer screening and management through its courses for medical officers and specialists. <sup>35</sup>
22	Breast cancer patient engagement	0-4	3	+1	The Indian Cancer Society and the Dream Foundation provide support to breast cancer patients. <sup>29,36</sup> The NICPR also releases campaign material and media outreach at periodic intervals.
				+2	The NCG, a network of cancer centres, institutes, and patient groups collaborates with the Indian government to enhance cancer care. Patient groups contribute to the development of the NCDCS as part of the NCG. However there is no evidence that they contribute to the clinical guidelines for breast cancer. <sup>30</sup>
23	Breast cancer educational initiatives	0-9	7	+6	The Indian Cancer Society (since 1951) offers education and support, and tracks their successes in education, awareness etc. in an annual report. <sup>31</sup> Breast Cancer Awareness Month is an annual campaign to educate people about breast cancer by the National Health Portal of India - set up by the Ministry of Health and Family Welfare. Trained frontline workers such as Accredited social health activists (ASHAs) provide prevention, control & screening services linked with referral support and continuity of care and have an important role in community outreach activity and health education. The Operational guidelines for prevention, screening and control of non-communicable diseases (including breast cancer) contain information about awareness raising activities. <sup>33</sup> However there is no evidence that education and awareness programmes for breast cancer are integrated into primary health care settings.
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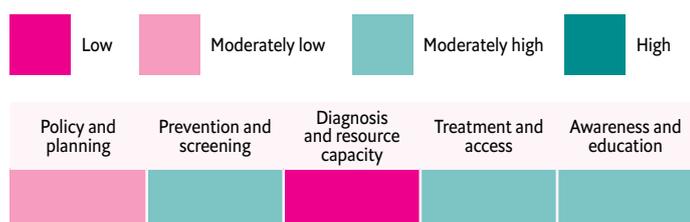


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## Women's cancer country snapshot Indonesia

Indonesia's scores range from low to moderately high across the five domains, with the country's best score being achieved in the awareness and education domain, which is close to entering the top band. There is the most room for improvement in the indicators related to policy and planning, and in diagnosis and resource capacity.



### Top opportunities for improvement in Indonesia

#### 1. Introduce a dedicated national elimination plan for cervical cancer and a national strategy for breast cancer in line with World Health Organisation (WHO) ambitions and targets

- To aid with the implementation of cancer policy, a national elimination plan for cervical cancer and a national strategy for breast cancer could be established, which include specific targets and goals for prevention (for cervical cancer), screening, diagnosis and treatment.
- To support their development, help achieve elimination of cervical cancer and meet WHO numbers for breast cancer, more government priority could be given to women's cancers as key policy areas, by expanding the fiscal space for these cancers and including implementation and additional services under local budgets.
- A national steering committee could be established to operationalise inter-governmental ministry coordination to help drive the national elimination plan for cervical cancer and the national strategy for breast cancer.

#### 2. Expand the coverage of the nationwide human papillomavirus (HPV) immunisation programme for cervical cancer prevention

- Despite programmes being in place, coverage of HPV vaccination is extremely low in Indonesia. Improving monitoring systems and implementing vaccination registers are critical for ensuring that high coverage for vaccination is met.
- Education on the importance of HPV vaccination for preventing cervical cancer is also key to increasing uptake and alleviating stigma. Momentum will need to continue, to ensure that disruptions to cancer control programmes caused by the COVID-19 pandemic do not prevent the expansion and scale-up of the HPV vaccination programme across the country.



### 3. Operationalise and roll out organised, population-based national screening programmes in line with WHO recommendations

- For cervical cancer, screening through HPV DNA testing is the recommended primary screening tool in all settings due to its high sensitivity, and the country would do well to transition away from using visual inspection under acetic acid (VIA), in line with recommendations by the WHO. To increase uptake, consideration could be given to integrating screening with existing services such as family planning consultations or women's health clinics, as this would also reduce transport costs and waiting time. Additionally, HPV self-sampling could be introduced as an option, especially for women living in rural or hard-to-reach areas.
- For breast cancer, to help ensure high screening coverage of women (especially those in the at-risk age group), an organised, population-based screening programme could be introduced, including mammography screening for high-risk women. This would help ensure the right women are targeted and diagnosed early.

### 4. Invest in the country's infrastructure and workforce capacity and increase and expand access to therapies

- In Indonesia there are low numbers of diagnostic equipment (radiotherapy machines, mammograms, CT scanners etc.) as well as extremely low numbers of cancer specialists, which impact the country's capacity to diagnose and treat breast and cervical cancers. This is especially the case in remote and hard-to-reach areas, with most tertiary hospitals being located in urban areas. There is therefore an urgent need to increase care capacity through acceleration and expansion of specialist education, and through improving the availability, accessibility and distribution of diagnostic services in geographically isolated and remote areas.
- Indonesia currently spends 3.4% of GDP on health expenditure, compared to a global average of 9.8%,<sup>1</sup> and therapies available in the public sector are limited to more basic treatment. There is room in Indonesia to expand access to diagnosis and advanced therapies and treatment through increased universal health care (UHC) coverage and reimbursement.
- The country could work to identify and allocate alternative funding mechanisms beyond national health spending to sustain UHC, for instance through grants and targeted funding by global donors, development agencies, and multilateral banks.

### 5. Rollout national awareness campaigns for cervical cancer and breast cancer

- In Indonesia, education and awareness programmes for cervical and breast cancer are critical to provide information for women on the importance of cancer prevention and screening, to encourage attendance and to reduce stigma.
- Programmes could be integrated at a national level into primary health care settings, to expand their reach, educate the community and ensure higher coverage. Patients should be at the heart of care, and there is also room in Indonesia to increase the involvement of patient groups in the development of clinical guidelines for both cancers to ensure the patient voice is heard.

## Women's cancer country snapshot: **Indonesia**



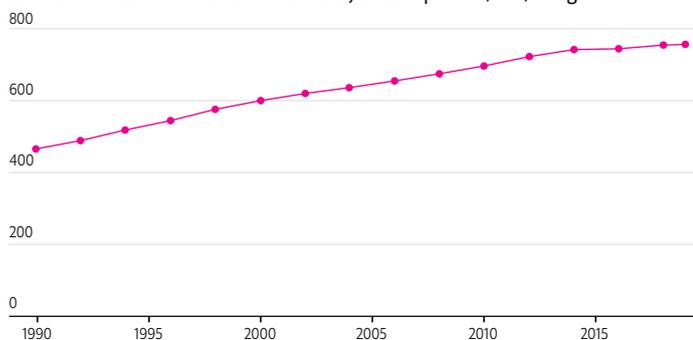
### Burden, incidence and mortality in Indonesia

Breast cancer			
	Indonesia	Asia	World
Age-standardised incidence per 100 000 women (2020)	44.0	36.8	47.8
Age-standardised mortality per 100 000 women (2020)	15.3	11.9	13.6
Cumulative risk of breast cancer, ages 0-74 (2020)	4.83	3.98	5.2

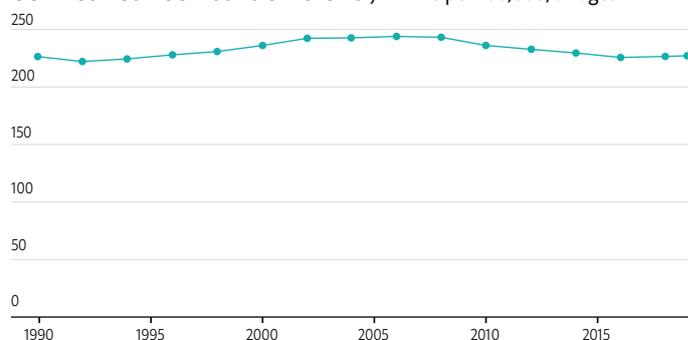
Source: Globocan 2020<sup>2</sup>

Cervical cancer			
	Indonesia	Asia	World
Age-standardised incidence per 100 000 women (2020)	24.4	12.7	13.3
Age-standardised mortality per 100 000 women (2020)	14.4	7.1	7.3
Cumulative risk of cervical cancer, ages 0-74 (2020)	2.69	1.35	1.39

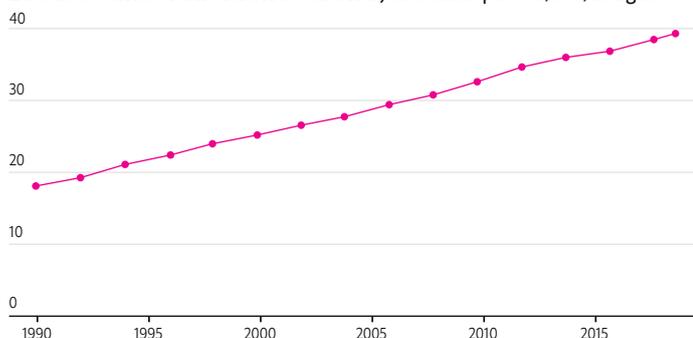
#### Breast cancer burden trend, DALY's per 100,000, all ages



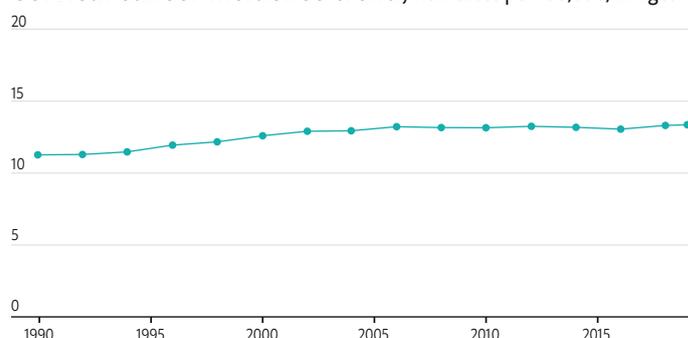
#### Cervical cancer burden trend, DALY's per 100,000, all ages



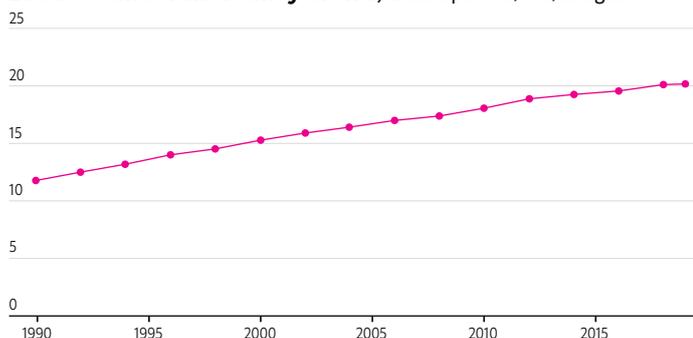
#### Breast cancer incidence trend, new cases per 100,000, all ages



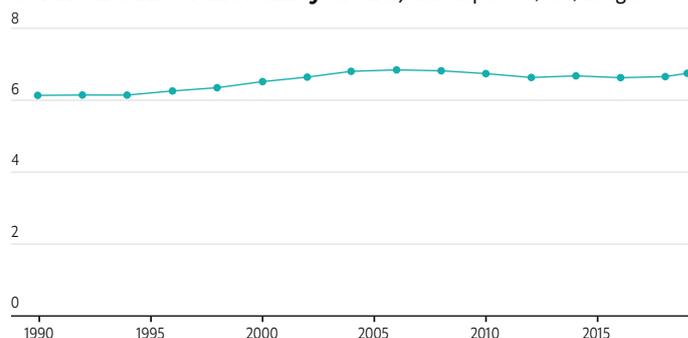
#### Cervical cancer incidence trend, new cases per 100,000, all ages



#### Breast cancer mortality trend, deaths per 100,000, all ages



#### Cervical cancer mortality trend, deaths per 100,000, all ages



Source: Global Burden of Disease, 2019<sup>3</sup>

## Women's cancer country snapshot: Indonesia



### Scorecard results

Indicator	Range	Score	Justification		
<b>Domain 1: Policy and planning</b>					
1	Cancer control plan	0-5	1	+1	The National Cancer Control Plan (NCCP) for 2015-2019 is currently in force. The NCCP 2019-2024 has been drafted but not officiated and will be integrated into the larger National Plan of NCD (currently being developed). <sup>4</sup>
				+0	There is no specific cervical cancer elimination plan or dedicated strategy solely for breast cancer.
2	Comprehensiveness	0-5	5	+5	The NCCP includes goals, objectives and priority evidence-based interventions in relation to prevention, early detection and diagnosis, treatment, palliative care, and survivorship. <sup>5,4</sup>
3	Implementation plan	0-7	3	+1	The Ministry of Health (MoH) regulations for the treatment of breast and cervical cancer has an implementation plan with surveillance and evaluation of cancer programmes for both breast and cervical cancer, however this needs to be introduced into the NCCP. <sup>6,7</sup>
				+2	The NCCP contains 13 strategic goals, and there are specific targets with end-dates (2030). <sup>8,9</sup>
4	Population-based cancer registry	0-7	2	+1	A sustainable PBCR was initiated in Jakarta in 2007 and the Indonesian cancer registry covers 26 regions (out of 34). <sup>10,11</sup> It is not linked to other health information systems, though a process is underway to link PBCRs with hospital records.
				+1	Indonesia's PBCRs cover 14% of the population. <sup>12</sup>
5	Cervical cancer clinical guidelines	0-3	2	+2	The National Guidelines for the treatment of cervical cancer were released in 2018. <sup>13</sup> The 2022 guidelines are currently under editing and finalisation by the MoH.
6	Breast cancer clinical guidelines	0-3	2	+2	The National Guidelines for the treatment of breast cancer were released in 2018. <sup>14</sup>
<b>Domain 2: Prevention and screening</b>					
7	HPV vaccination programme	0-7	5	+4	The HPV vaccine is on the list of routine free immunisations administered nationwide in Indonesia. <sup>15</sup>
				+1	The HPV vaccine is given to female students in the 5th and 6th grades - in line with recommendations made by the WHO. <sup>16</sup>
				+0	Currently the vaccination rate is at 8% for the first dose and 7% for the second dose. <sup>17</sup>
8	Cervical cancer screening programme	0-16	10	+4	An opportunistic cervical cancer screening programme exists at the public primary health care level, as well as an organised programme where screening is performed every 5 years for all women aged 30 to 49 years. <sup>6</sup>
				+3	A screening registry exists, which identifies women eligible for screening and tracks their history of screening. <sup>18</sup>
				+1	VIA is used as the primary screening test. <sup>17</sup>
				+2	Since 2015, women in Indonesia aged 40 and above are eligible for cervical cancer screening in primary health care funded by the MoH. <sup>19</sup>
				+0	HPV self-sampling is not part of the cervical cancer screening programme.
				+0	Since VIA is the primary screening test, this is not in line with WHO recommendations.
9	Breast cancer screening programme	0-10	5	+2	An opportunistic breast screening programme exists at the public primary health care level, but no organised programme. <sup>6</sup>
				+1	Clinical Breast Examination (CBE) is used at primary health care centres. <sup>6,21</sup>
				+2	Since 2015, women in Indonesia aged 40 and above are eligible for breast cancer screening in primary health care funded by the MoH. <sup>19</sup>
				+0	The overall breast cancer screening among women is 18.74% according to a 2021 study. <sup>22</sup>

## Women's cancer country snapshot: Indonesia



### Scorecard results

Indicator	Range	Score	Justification		
<b>Domain 3: Diagnosis and resource capacity</b>					
10	Cervical cancer guidelines	0-5	3	+1	Guidelines cover diagnosis. <sup>13</sup>
				+2	There is a clearly defined referral system for movement from primary care to secondary and tertiary care and established programmes linking individuals who have been diagnosed with HPV with prevention, treatment, and care resources. <sup>18</sup>
				+0	There is no evidence that guidelines include recommendations for the interval between diagnosis and initial treatment and or include information on patient navigation procedures.
11	Breast cancer guidelines	0-3	1	+1	Guidelines cover diagnosis. <sup>14</sup>
				+0	There is no evidence that guidelines include recommendations for the interval between diagnosis and initial treatment and or include information on patient navigation procedures.
12	Access to services in the public sector	0-6	1	+1	Though the national health scheme in Indonesia covers almost 80% of the country's population, evidence could not be found of diagnostic services being available under public healthcare, with the exception of biopsy. <sup>23</sup>
13	Health system capacity	0-8	0	+0	Per 10,000 cancer patients, Indonesia has 1.7 external beam radiotherapy machines, an unknown number of mammograms, 7.9 CT scanners and 2 MRI scanners. <sup>24</sup>
14	Workforce	0-6	0	+0	Per 10,000 cancer patients, Indonesia has 26 radiologists, 1 radiation oncologist and an unknown number of surgeons. <sup>17</sup>
<b>Domain 4: Treatment and access</b>					
15	Cervical cancer guidelines	0-4	2	+2	Cervical cancer guidelines cover treatment but there is no evidence of a recommendation around shared decision making or treatment by a multidisciplinary team. <sup>13</sup> The Guidelines for the Control of Breast Cancer and Cervical Cancer include a referral pathway to supportive and palliative care services. <sup>7</sup>
16	Breast cancer guidelines	0-4	2	+2	Breast cancer guidelines cover treatment but there is no evidence of a recommendation around shared decision making, or treatment by a multidisciplinary team. <sup>14</sup> The Guidelines for the Control of Breast Cancer and Cervical Cancer include a referral pathway to supportive and palliative care services. <sup>7</sup>
17	Access to services in the public sector	0-8	6	+6	Under the National Health Insurance Programme, patients in Indonesia have access to surgery, radiotherapy, rehabilitation, breast reconstruction, surveillance for recurrence and psychosocial or mental health support. There is no evidence of access to funding for fertility preservation, or palliative/hospice care (which is mostly done at home). <sup>23</sup>
18	Cervical cancer drugs	0-5	3	+3	All cervical cancer drugs listed on the WHO Essential Cancer Drug List of 2021 (carboplatin, cisplatin and paclitaxel) are included in the Indonesian National Formulary, and are reimbursed. There is no evidence of innovative drugs beyond this list being available. <sup>25</sup>
19	Breast cancer drugs	0-5	2	+2	All breast cancer drugs listed on the WHO Essential Cancer Drug List of 2021 are included in the Indonesian National Formulary, though not all are reimbursed. There is no evidence of innovative drugs beyond this list being available. <sup>25</sup>
<b>Domain 5: Awareness and education</b>					
20	Cervical cancer patient engagement	0-4	3	+1	The CISC (Cancer Information & Support Center) provides support to cervical cancer patients. <sup>26</sup>
				+1	Patient groups representing cervical cancer survivors were involved in the development of NCCP 2019-2024. <sup>4</sup> However there is no evidence that they contribute to clinical guidelines government to enhance cancer care. Patient groups contribute to the development of the NCDCS as part of the NCG. However there is no evidence that they contribute to the clinical guidelines for cervical cancer. <sup>30</sup>
				+1	The Indonesian Coalition to Prevent Cervical Cancer (KICKS) is made up of six groups (Indonesian Oncology & Gynecology Association, the Indonesian Working Group on HPV, the Indonesian Cancer Foundation, the Cervical Cancer Care Foundation, the Women's Health Foundation and Kalyanamitra) whose aim is to increase public awareness about cervical cancer. Their focus is to support government efforts to accelerate cervical cancer prevention. They collaborate with the National Population and Family Planning Agency (BKKBN). <sup>27</sup>
21	Cervical cancer educational initiatives	0-9	7	+6	The National program for the prevention and early detection of cancer includes activities related to education of the public (since 2015). There is a clear process for monitoring and evaluation (Chapter VIII). <sup>28</sup> Community-based outreach programmes also exist in Indonesia. There is room, however, to integrate education and awareness programmes for cervical cancer into primary health care settings, and for government-led outreach efforts.
				+1	The Cervical and Breast Cancer Prevention (CECAP) Project (stated in 2007) includes training for providers, clinical practice, mentoring and coaching etc. <sup>29</sup>
22	Breast cancer patient engagement	0-4	3	+1	The most active and established patient organisation is the Indonesian Breast cancer foundation (Yayasan Kanker Payudara Indonesia). <sup>30</sup> The group works closely with many professional and government owned organization in its activities to promote the awareness and early detection nationally.
				+2	Patient groups representing breast cancer survivors were involved in the development of NCCP 2019-2024. <sup>4</sup> However there is no evidence that they contribute to clinical guidelines.
23	Breast cancer educational initiatives	0-9	7	+6	The National program for the prevention and early detection of cancer includes activities related to education of the public (since 2015). There is a clear process for monitoring and evaluation (Chapter VIII). <sup>28</sup> In 2022 the CISC released the Navigation Guide for Breast Cancer Patients guidebook, <sup>31</sup> and also in 2022 United Tractors, the Ministry of Health and the Love Pink Indonesia Community organised an event to increase breast health awareness including educational webinars and campaigns on social media. <sup>32</sup> There is room, however, to integrate education and awareness programmes for breast cancer into primary health care settings, and for government-led outreach efforts.
				+1	The CECAP Project (stated in 2007) included training for providers, clinical practice, mentoring and coaching etc. <sup>29</sup>



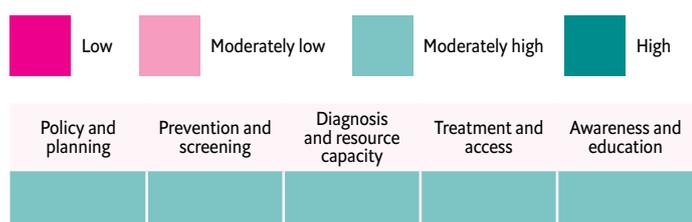
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## Women's cancer country snapshot Malaysia

Malaysia sits comfortably in the upper middle of the moderately high scoring band. As such, there are opportunities for improvement across all five domains, with this scope especially apparent in the diagnosis and resource capacity domain.



### Top opportunities for improvement in Malaysia

#### 1. Implement up-to-date, accessible and interoperable digital registries for breast and cervical cancer, covering immunisation (for cervical cancer), screening, and patient outcomes

- While Malaysia has a national population based cancer registry (PBCR), it is often backdated; the most recent report (2012-2016) was published in 2019.<sup>1</sup> Additionally, it is not linked with any other health information systems and its coverage is unknown. In order to avoid under-reporting, registries should be kept up-to-date.
- For cervical cancer, though a screening registry exists, it does not identify women eligible for screening or track their history of screening. There is therefore room to expand these registries to improve follow-up, help study the burden, and capture data to improve programmes and services.

#### 2. Fully implement an organised, population-based, national cervical cancer HPV DNA screening programme, in line with World Health Organisation (WHO) recommendations, to meet elimination goals

- In Malaysia, an opportunistic cytology-based cervical cancer screening programme exists at the public primary health care level, but there is no organised programme. Following successful pilot trials, the Malaysian Government has announced plans for a national HPV DNA based screening programme, which would bring the country closer to meeting the WHO recommendations. However there is room to increase the capacity of HPV DNA testing, as this is currently limited. An option could be a point-of-care approach using portable HPV DNA tests and on-the-spot treatment.<sup>2</sup>

- Alternative funding mechanisms could be explored as a way to increase capacity, especially in rural and remote areas of the country. Additionally, WHO recommendations state that the screening programme should be organised and population-based at the national level, which Malaysia could consider to increase uptake.
- To increase awareness among healthcare professionals (HCPs) and general practitioners (GPs) (who are often the first point of contact to patients) about the importance of performing cervical screening using high quality, validated HPV DNA screening tests following WHO recommendations, education could be expanded and the same message shared across all parties (policies, guidelines, primary care, patient advocacy groups etc.). A multi-stakeholder (intragovernmental and intersectoral) approach would do well to be adopted for a holistic and sustainable cancer response.
- To achieve elimination of cervical cancer and meet the WHO targets, Malaysia will also need to accelerate its efforts, as by current estimates cervical cancer will be eliminated by 2065 to 2070.<sup>2</sup>



### 3. Improve patient navigation and resource allocation

- Compared to its neighbours, Malaysia offers many diagnostic modalities under universal healthcare such as biopsies, pathology reporting, CT Scans and biomarker testing. However, a lack of resources and patient navigation issues (especially for those living outside of urban cities) have been highlighted as gaps, with patients moving to the private sector due to perceived poorer quality of care and long waiting times.<sup>3</sup> This can result in more out of pocket (OOP) costs, and inconsistent care. Additionally, patients may drop out of the journey and not receive the diagnosis and care needed. This highlights a need for decentralizing cancer care outside of larger cities to district healthcare facilities, and for work to be done on implementing strategies to increase the number of facilities managing cancer patients (there are currently only six Ministry of Health oncology centres for the population).<sup>4</sup> This would go a long way towards strengthening patient navigation.
- GPs, both public and private, should also be encouraged to share with their patients information related to immunisation, screening and treatment, and enhance efforts to increase awareness and uptake of evidence-based cervical cancer and breast cancer interventions among the general population.

### 4. Move towards better access to innovative tools and advanced treatments in the public sector

- Malaysia currently allows access to all drugs within the WHO's Essential Cancer Drug list, and drugs beyond this list are also available (though not reimbursed by the government). To move towards better access to more innovative tools and advanced treatments, Malaysia will need to continue updating its National Essential Medicines List (NEML) in accordance with the latest WHO Essential Cancer Drug List and provide reimbursement, including for those not listed in the NEML.
- In addition to reimbursement, innovative funding approaches could be explored, for instance specific pricing models, outcome-based pricing or tiered pricing, to increase access to innovative medicines and advanced treatments.

### 5. Ensure that patient organisations are engaged as contributors to clinical guidelines and cancer related care policies for both breast and cervical cancer

- While patient advocates working within the Ministry of Health contribute in some way to guideline development in Malaysia, patient groups do not have a substantial voice. Including their views in guideline development and in the development of the Malaysian National Medicines Policy would be a good step forward for Malaysia, especially as the cervical cancer guidelines are due for an update.

Women's cancer country snapshot: **Malaysia**



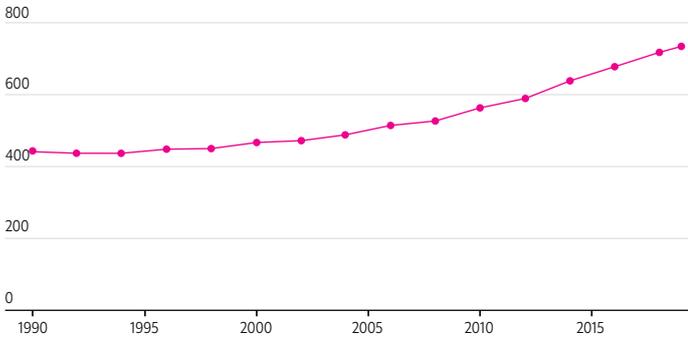
**Burden, incidence and mortality in Malaysia**

Breast cancer			
	Malaysia	Asia	World
Age-standardised incidence per 100 000 women (2020)	49.3	36.8	47.8
Age-standardised mortality per 100 000 women (2020)	20.7	11.9	13.6
Cumulative risk of breast cancer, ages 0-74 (2020)	5.29%	3.98	5.2

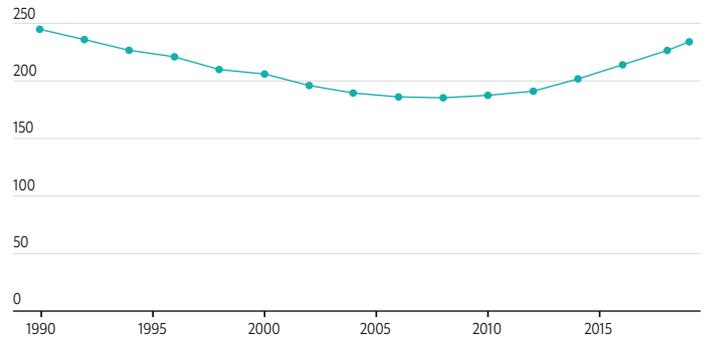
Source: Globocan 2020<sup>5</sup>

Cervical cancer			
	Malaysia	Asia	World
Age-standardised incidence per 100 000 women (2020)	10.2	12.7	13.3
Age-standardised mortality per 100 000 women (2020)	5.8	7.1	7.3
Cumulative risk of cervical cancer, ages 0-74 (2020)	1.12%	1.35	1.39

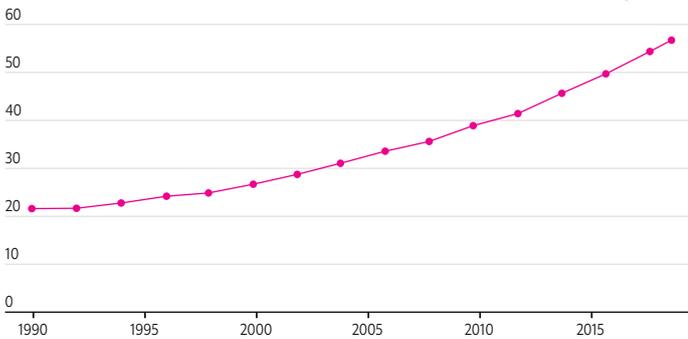
**Breast cancer burden trend, DALY's per 100,000, all ages**



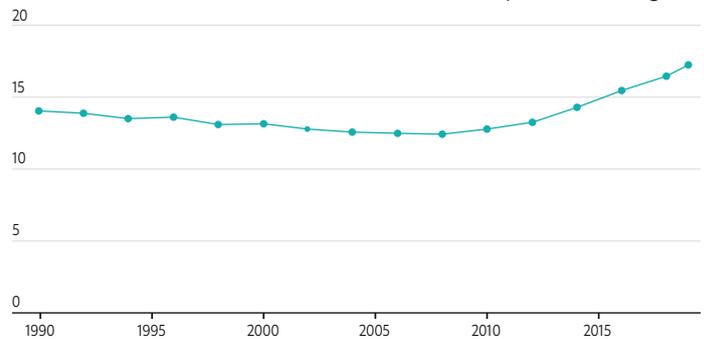
**Cervical cancer burden trend, DALY's per 100,000, all ages**



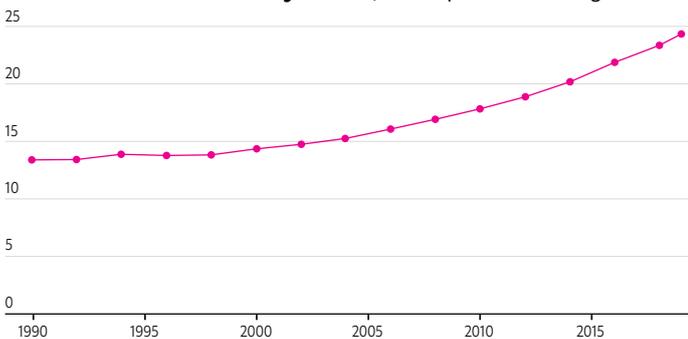
**Breast cancer incidence trend, new cases per 100,000, all ages**



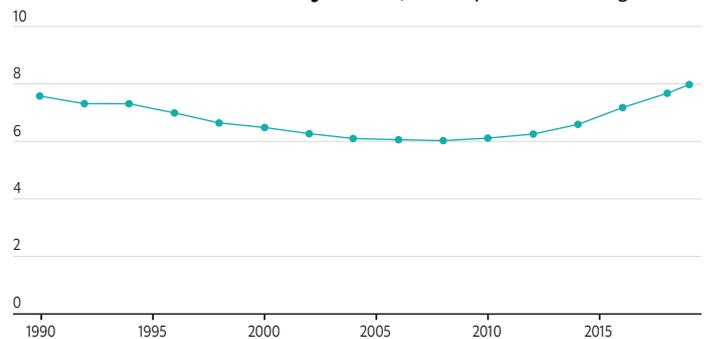
**Cervical cancer incidence trend, new cases per 100,000, all ages**



**Breast cancer mortality trend, deaths per 100,000, all ages**



**Cervical cancer mortality trend, deaths per 100,000, all ages**



Source: Global Burden of Disease, 2019<sup>6</sup>



## Scorecard results

Indicator	Range	Score	Justification	
<b>Domain 1: Policy and planning</b>				
1	0-5	4	+3	The National Strategic Plan for the Cancer Control Programme (NSPCCP) was released in 2021 by the Disease Control Division at the Ministry of Health Malaysia (MoH) for the year 2021-2025. <sup>4</sup>
			+1	The MoH released an Action Plan Towards the Elimination of Cervical Cancer for 2021-2030. <sup>7</sup> There is no specific plan or strategy solely for breast cancer.
2	0-5	5	+5	The NSPCCP includes goals, objectives and priority evidence-based interventions in relation to prevention, early detection and diagnosis, treatment, palliative care, and survivorship. <sup>4</sup>
3	0-7	4	+2	Implementation of the cancer control programme is mentioned as focus areas in the NSPCCP. For each focus area, the plan includes specific objectives, actions and performance indicators to measure implementation. <sup>4</sup>
			+1	The Action Plan Towards the Elimination of Cervical Cancer has triple intervention targets to reach by 2030 for cervical cancer elimination. <sup>7</sup>
			+1	The Action Plan Towards the Elimination of Cervical Cancer includes details of a plan to improve surveillance systems to monitor effectiveness and impact of interventions and activities. <sup>7</sup> There is no specific surveillance system or plan solely for breast cancer.
4	0-7	2	+2	The Malaysian National Cancer Registry (MNCR) was launched in 2007, and covers 13 states and 2 federal territory cancer registries. <sup>1,8</sup> There is no specific PBCR solely for breast and/or cervical cancer.
			+0	Malaysia's PBCR is often backdated 3-5 years and data is entered manually. The NCR is not linked with any other health information systems and its coverage is unknown.
5	0-3	1	+1	The second edition of the Cervical Cancer Clinical Practice Guidelines (CPG) was released in 2015, but has not seen any updates since. <sup>9</sup>
6	0-3	2	+2	The third edition of Breast Cancer CPG was released and updated in 2019. <sup>10</sup>
<b>Domain 2: Prevention and screening</b>				
7	0-7	7	+2	The HPV vaccination programme was introduced in the Malaysian Expanded Programme on Immunization (EPI) in 2010 targeting girls aged 13 years. It was extended in 2012 to target the catch-up group of 18 year-old girls. <sup>11</sup>
			+2	There is high coverage of the vaccine, with ~85% of the target age group of girls completing the vaccination course in 2021. <sup>12</sup>
			+2	Vaccination under the HPV programme is provided for free and is delivered through an on-going school based programme. <sup>11</sup>
			+1	The vaccination programme is in line with WHO recommendations.
8	0-16	8	+2	An opportunistic screening programme exists at the public primary health care level for eligible women aged 20-65 years old, but no organised programme. <sup>13</sup>
			+1	A screening registry exists, but doesn't specifically identify women eligible for screening or track their history of screening. <sup>14</sup>
			+2	In 2019, the MoH started providing self-sampling for HPV DNA testing, the implementation of which is planned for four phases and will be continued during the NSPCCP 2021-2025. <sup>4</sup>
			+1	Cytology is the most widely used cervical cancer screening method, but the country is transitioning to HPV DNA as the primary screening test. <sup>15,16</sup>
			+2	Cervical cancer screening is fully covered under UHC for women over 40 years. <sup>3</sup> Malaysia also offers free HPV DNA tests in community health clinics (National Population and Family Development Board (LPPKN) clinics) for women aged between 30-65 years. <sup>17</sup>
			+0	In Malaysia, screening uptake of cervical cancer was on average ~25% women between 2015-2020. <sup>7</sup>
9	0-10	7	+2	Breast cancer screening is opportunistic in Malaysia and there is no organised programme. <sup>18</sup>
			+2	The NSPCCP recommends opportunistic Clinical Breast Examination (CBE). <sup>4</sup> The most recent uptake numbers are 48% in 2016. <sup>16</sup>
			+1	Opportunistic mammography screening is offered at primary health clinics and private hospitals. <sup>19</sup>
			+2	CBE is fully covered under UHC for women over 40 years. <sup>3</sup>



## Scorecard results

Indicator	Range	Score	Justification		
<b>Domain 3: Diagnosis and resource capacity</b>					
10	Cervical cancer guidelines	0-5	3	+2	Guidelines cover diagnosis and include recommendations for the interval between diagnosis and initial treatment, but there is no evidence of information on patient navigation procedures. <sup>9</sup>
				+1	There is a clearly defined referral system for movement from primary care to secondary and tertiary care. <sup>14</sup>
				+0	There is no evidence of guidelines including information on linking individuals who have been diagnosed with HPV with prevention, treatment, and care resources. <sup>14</sup>
11	Breast cancer guidelines	0-3	3	+3	Guidelines cover diagnosis, include recommendations for the interval between diagnosis and initial treatment, and information on patient navigation procedures. <sup>10</sup>
12	Access to services in the public sector	0-6	3	+3	Diagnostic services such as biopsy, CT scans and biomarker testing are covered for all Malaysians under public healthcare. <sup>3</sup>
				+0	There is no evidence that BRCA testing and next generation sequencing are covered under public healthcare in Malaysia. Mammography is only subsidized at LPPKN clinics and there are long delays. <sup>3</sup>
13	Health system capacity	0-8	6	+6	Per 10,000 cancer patients, Malaysia has 12.3 external beam radiotherapy machines, 44.3 mammograms, 46.3 CT scanners, and 21 MRI scanners. <sup>20</sup>
14	Workforce	0-6	3	+3	Per 10,000 cancer patients, Malaysia has 114 radiologists, 3 radiation oncologists, and 449 surgeons. <sup>15</sup>
<b>Domain 4: Treatment and access</b>					
15	Cervical cancer guidelines	0-4	3	+3	Cervical cancer guidelines cover treatment, include a referral pathway to supportive or palliative care services, and recommend shared decision making but there is no evidence of a recommendation for treatment by a multidisciplinary team. <sup>9</sup>
16	Breast cancer guidelines	0-4	3	+3	Breast cancer guidelines cover treatment, recommend treatment by a multidisciplinary team and include a referral pathway to supportive or palliative care services, but there is no evidence of a recommendation for shared decision making. <sup>10</sup>
17	Access to services in the public sector	0-8	5	+5	All Malaysians have access to surgery, radiotherapy, surveillance, rehabilitation and palliative or hospice care under public healthcare. <sup>3</sup> There is no evidence that fertility preservation <sup>21</sup> and breast reconstruction are accessible in the public sector and there is no structured programme in place for psychological or mental health support in the public sector. <sup>22</sup>
18	Cervical cancer drugs	0-5	4	+4	All cervical cancer drugs listed on the WHO Essential Cancer Drug List of 2021 (carboplatin, cisplatin and paclitaxel) are included in the Malaysia National Essential Medicines List, 2023, and are fully reimbursed. <sup>23,24</sup> Innovative drugs beyond this list are available but are not reimbursed. <sup>25</sup>
19	Breast cancer drugs	0-5	3	+3	All breast cancer drugs listed on the WHO Essential Cancer Drug List of 2021 are included in the Malaysia National Essential Medicines List, 2023, but not all are fully reimbursed. <sup>24</sup> Innovative drugs beyond this list are available but are not reimbursed. <sup>25</sup>
<b>Domain 5: Awareness and education</b>					
20	Cervical cancer patient engagement	0-4	3	+1	The Pink Unity group provides support to patients, education and advocacy for cervical cancer awareness. <sup>26</sup>
				+1	Organisations such as the National Cancer Society Malaysia and War on Cancer Malaysia participate in developing the NSPCCP. <sup>4</sup> However, there is no evidence that they contribute to clinical guidelines. <sup>9</sup>
				+1	The ROSE (Removing Obstacles for cervical ScREening) Foundation and MoH collaborate to establish and roll out screening for cervical cancer. <sup>27</sup>
21	Cervical cancer educational initiatives	0-9	7	+6	The National Cancer Society of Malaysia (NCSM) has been providing cervical cancer education and support services since 1966, along with January being cervical cancer awareness month in the country. <sup>28</sup> NCSM also releases a report that tracks their effectiveness in cancer educational programmes. <sup>29</sup> Community-based outreach programmes organised by civil society organisations like NCSM exist in Malaysia, but there is room for more government-led initiatives here. While education programmes are integrated into primary health care settings, <sup>9</sup> there is room to have government-run educational programmes and community-based outreach programmes for cervical cancer.
				+1	The Malaysian Oncological Society offers educational programmes and resources to oncologists in Malaysia, including for cervical cancer. <sup>30</sup>
22	Breast cancer patient engagement	0-4	3	+1	The Breast Cancer Welfare Association Malaysia (BCWA), the Breast Cancer Foundation and the Pink Unity group provide support to breast cancer patients and help raise awareness. <sup>26, 31, 32</sup>
				+1	Organisations such as the National Cancer Society Malaysia and War on Cancer Malaysia participate in developing the NSPCCP. <sup>4</sup> However, though patient advocates are listed as external reviewers, there is no evidence that these patient organisations contribute to clinical guidelines. <sup>10</sup>
23	Breast cancer educational initiatives	0-9	7	+6	The National Cancer Society of Malaysia (NCSM) has been providing breast cancer education and support services since 1966. <sup>28</sup> NCSM also releases a report that tracks their effectiveness in breast cancer educative programmes. <sup>29</sup> Community-based outreach programmes organised by civil society organisations like NCSM and MAKNA exist in Malaysia, but there is room for more government-led initiatives here. Education and awareness programmes are integrated into primary health care settings <sup>18</sup> , there is however, a lack of government-run educational programmes for breast cancer in the country.
				+1	The Malaysian Oncological Society offers educational programmes and resources to oncologists in Malaysia, including for breast cancer. <sup>30</sup>



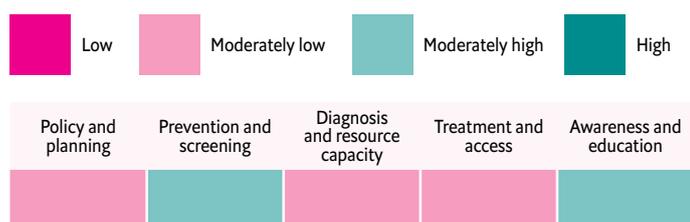
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Women's cancer  
country snapshot

## Philippines

The Philippines scored moderately high in two domains in our scorecard, domain two on prevention and screening and domain five on awareness and education. There are plenty of opportunities for improvement in the other domains, particularly domain three on diagnosis and resource capacity.



## Top opportunities for improvement in Philippines

### 1. Introduce a dedicated national elimination plan for cervical cancer and a dedicated strategy for breast cancer in line with World Health Organisation (WHO) ambitions and targets

- To aid with the implementation of cancer policy, a national elimination plan for cervical cancer and a national strategy for breast cancer could be established, which include specific targets and goals for prevention (for cervical cancer), screening, diagnosis and treatment.
- To support their development, help achieve elimination of cervical cancer and meet WHO numbers for breast cancer, more government priority could be given to women's cancers as key policy areas, by expanding the fiscal space for these cancers and including implementation and additional services under local budgets.
- A national steering committee could be established to operationalise inter-governmental ministry coordination to help drive the national elimination plan for cervical cancer and the national strategy for breast cancer.

### 2. Implement national and accessible digital registries for cancer, including for breast and cervical cancer

- The Philippines does not have a national population based cancer registry, and instead relies on data from smaller registries to monitor and evaluate programmes on cancer prevention, detection and control, which have extremely limited coverage. To ensure timely and accurate information, monitoring systems would do well to be improved, as well as introducing a national, digital, linked population based cancer registry in the country.
- Cancer-specific registries which also track women's history of immunisation and screening will also be critical for ensuring that coverage is met, to improve follow-up, to help study the burden, and to capture data which would improve programmes and services.



### 3. Roll out organised, population-based national screening programmes in line with WHO recommendations

- For cervical cancer, currently only opportunistic screening exists in the Philippines using visual inspection under acetic acid (VIA) as the primary screening test. Screening through HPV DNA testing is the recommended primary screening tool in all settings due to its high sensitivity, and the country would do well to transition away from using VIA, in line with recommendations by the WHO. To increase uptake (which is at present the lowest compared to neighbouring countries), active invitation to screening could be introduced in the form of an organised programme, and consideration could be given to integrating screening with existing services such as family planning consultations or women's health clinics, as this would also reduce transport costs and waiting time. Additionally, HPV self-sampling could be introduced as an option, especially for women living in rural or hard-to-reach areas.
- For breast cancer, currently no nationwide screening programme exists in the Philippines. To help ensure high screening coverage (especially for women in the at-risk age group), an organised, population-based national breast cancer screening programme could be introduced, including mammography screening for high-risk women. This will help ensure the right women are targeted and diagnosed early.

### 4. Invest in the country's infrastructure and workforce capacity and increase and expand access to therapies

- There are several areas, spanning both equipment and workforce, where there is a need to expand the availability of key resources. For example, the Philippines has a low number of external beam radiotherapy machines, mammograms and MRI scanners for the number of cancer patients in the country, as well as a low number of radiologists and surgeons per 10,000 cancer patients, both among the lowest in the region. Efforts are therefore needed to increase the number of cancer specialists in the country as well as improve equity in their distribution to ensure universal access to cancer care in the Philippines.
- The Philippines currently spends 5.6% of GDP on health expenditure, compared to a global average of 9.8%,<sup>1</sup> and therapies available in the public sector are limited to more basic treatment, with high out of pocket (OOP) costs for advanced treatments. Despite evidence showing that newer targeted agents significantly improve survival rates, access to these drugs is lacking in the Philippines, with only one being approved and available in the country. As the Philippines works to implement the new National Integrated Cancer Control Act (NICCA), this could be seen as an opportunity to reduce the financial burden on cancer patients by expanding access under universal health coverage (UHC). Additionally, improving approval and availability of additional innovative drugs could be considered.
- The country could work to identify and allocate alternative funding mechanisms beyond national health spending to sustain UHC, for instance through grants and targeted funding by global donors, development agencies, and multilateral banks.

### 5. Improve national awareness campaigns for breast and cervical cancer

- As screening rates in the Philippines are low, there is clearly room to increase awareness and education around the beneficial and life-saving aspects of screening. Education and awareness programmes for women's cancers could be integrated into primary health care settings, with national-level campaigns and activities organised in collaboration with the Ministry of Health.



Women's cancer country snapshot: **Philippines**

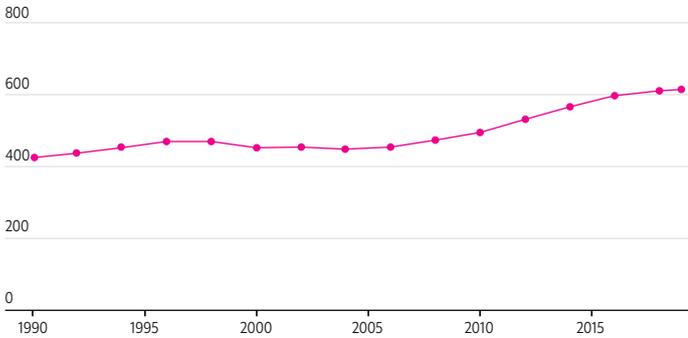
**Burden, incidence and mortality in Philippines**

Breast cancer			
	Philippines	Asia	World
Age-standardised incidence per 100 000 women (2020)	52.7	36.8	47.8
Age-standardised mortality per 100 000 women (2020)	19.3	11.9	13.6
Cumulative risk of breast cancer, ages 0-74 (2020)	5.66	3.98	5.2

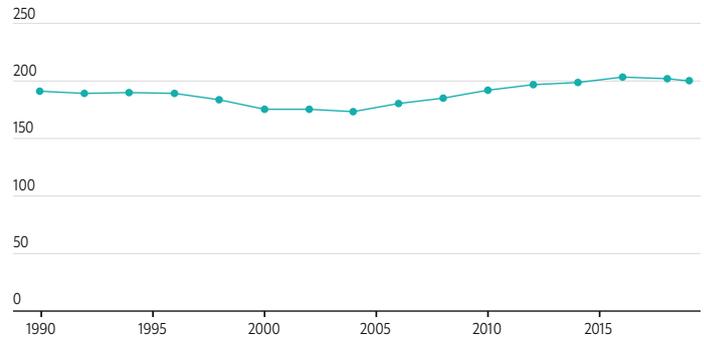
Source: Globocan 2020<sup>2</sup>

Cervical cancer			
	Philippines	Asia	World
Age-standardised incidence per 100 000 women (2020)	15.2	12.7	13.3
Age-standardised mortality per 100 000 women (2020)	7.9	7.1	7.3
Cumulative risk of cervical cancer, ages 0-74 (2020)	1.61	1.35	1.39

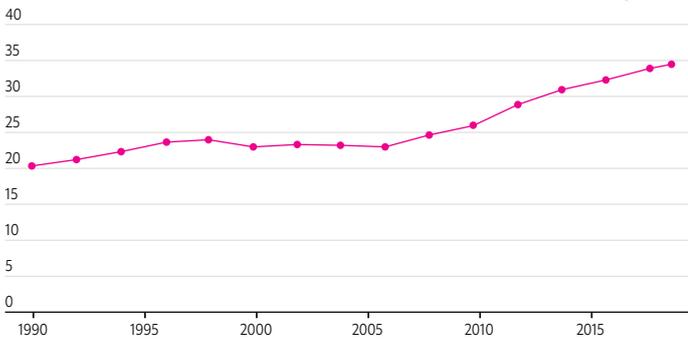
**Breast cancer burden trend, DALY's per 100,000, all ages**



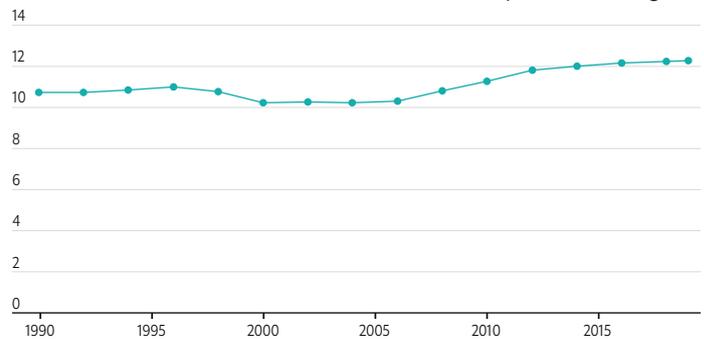
**Cervical cancer burden trend, DALY's per 100,000, all ages**



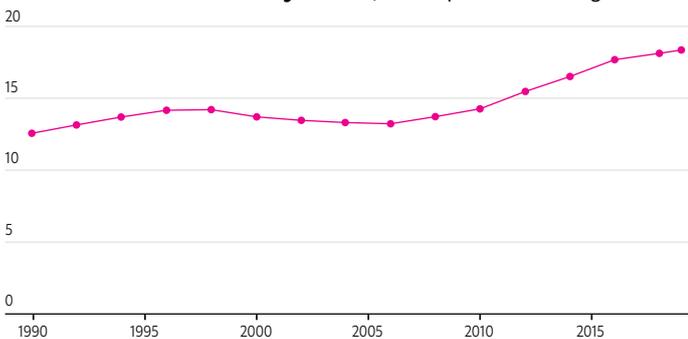
**Breast cancer incidence trend, new cases per 100,000, all ages**



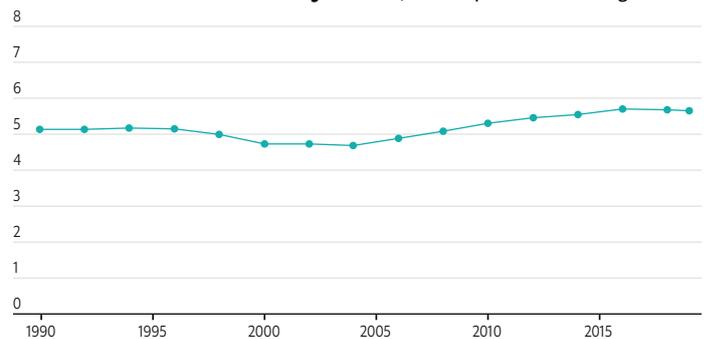
**Cervical cancer incidence trend, new cases per 100,000, all ages**



**Breast cancer mortality trend, deaths per 100,000, all ages**



**Cervical cancer mortality trend, deaths per 100,000, all ages**



Source: Global Burden of Disease, 2019<sup>3</sup>

## Women's cancer country snapshot: Philippines



### Scorecard results

Indicator	Range	Score	Justification		
<b>Domain 1: Policy and planning</b>					
1	Cancer control plan	0-5	1	+1	The National Cancer Prevention and Control Action Plan (NCPCAP) 2015-2020 is currently in force. The National Integrated Cancer Control Act (NICCA) was signed into law in 2019 and the National Integrated Cancer Control Strategic Plan 2021-2030 is currently being developed by the Cancer Control Council led by the Department of Health. <sup>4,5</sup> Cancer control is also included in the Omnibus Health Guidelines.
				+0	There is no specific cervical cancer elimination plan or dedicated strategy solely for breast cancer.
2	Comprehensiveness	0-5	4	+4	The NCPCAP includes goals and objectives in relation to prevention, early detection and diagnosis and treatment and palliative care (make up the "6 Pillars"), but not survivorship. <sup>6</sup>
3	Implementation plan	0-7	2	+2	The National Cancer Control Committee implements, monitors and evaluates the NCPCP regularly through implementation review and impact evaluation. There are goals and objectives laid out. <sup>4</sup>
				+0	There is no evidence that the NCPCAP includes explicit targets to reach by 2030 for reaching cervical cancer elimination, and there is no evidence of a long-term surveillance system to monitor effectiveness and impact of interventions and activities for cervical or breast cancer control. <sup>4</sup>
4	Population-based cancer registry	0-7	2	+1	There are three Population Based Cancer Registries (PBCRs) in the Philippines (Manila Cancer Registry, Cebu Cancer registry and Rizal Cancer registry). There is no national PBCR and there is no evidence that the registries are linked to other health information systems in the country. <sup>7</sup>
				+1	The Philippine Cancer Society-Manila Cancer Registry and the DOH-Rizal Cancer Registry cover the National Capital Region, which accounted for approximately 12.37% of the Philippine population in 2020. <sup>8</sup>
				+0	There is no breast cancer or cervical cancer specific PBCR.
5	Cervical cancer clinical guidelines	0-3	2	+2	The Society of Gynecologic Oncology released Clinical Practice Guidelines for cervical cancer in 2019. <sup>9</sup> Clinical Practice Guidelines for the Management of Abnormal Cervical Cancer Screening Results was released in 2023. <sup>10</sup>
6	Breast cancer clinical guidelines	0-3	3	+3	The Department of Health published the Breast Cancer National Clinical Practice Guidelines in 2022. <sup>11</sup>
<b>Domain 2: Prevention and screening</b>					
7	HPV vaccination programme	0-7	6	+4	A national HPV immunisation programme has existed in the Philippines since 2015. This is a school-based immunisation programme targeting girls aged 9–14 years and the vaccine is provided for free. <sup>12</sup>
				+1	Coverage is 24% for girls by age 15. <sup>13</sup>
				+1	Guidelines are in line with WHO recommendations.
8	Cervical cancer screening programme	0-16	8	+2	An opportunistic screening programme exists at the public primary health care level, but no organised programme. <sup>14</sup>
				+2	A screening registry exists, which identifies women eligible for screening but does not track their history of screening. <sup>15</sup>
				+1	HPV self-sampling is not part of the cervical cancer screening programme, but there have been some pilot studies such as the Scale Up Cervical Cancer Elimination with Secondary prevention Strategy (SUCCESS) that included HPV testing with self-collection. <sup>16</sup>
				+1	VIA is the most widely used and primary screening test. <sup>17</sup>
				+2	Under the UHC Bill passed in 2019, the government, through PhilHealth, fully funds cervical cancer screening. <sup>18,19</sup>
				+0	1% of women aged 35-49 in the Philippines have had a cervical cancer screening in the last 5 years. <sup>17</sup> A health systems survey showed that the average annual coverage of cervical cancer VIA screening in urban areas was 5.5%, and in rural areas was 0.39%. <sup>20</sup>
9	Breast cancer screening programme	0-10	4	+1	Currently, no nationwide breast cancer screening programme is available in the Philippines. <sup>21</sup>
				+1	The Philippines Breast Cancer Control Program recommends monthly Self Breast Examination (BSE) and annual Clinical Breast Examination (CBE) by health care providers. <sup>14</sup>
				+2	Under the UHC bill, the government, through the national health insurance programme, fully funds breast cancer screening for women aged 25-55. <sup>19</sup>
				+0	A study on breast cancer prevention and screening found that 15% of Filipino women had had a CBE at a health centre and 60% of women had never practised breast self-exams. <sup>21</sup>



## Scorecard results

Indicator	Range	Score	Justification		
<b>Domain 3: Diagnosis and resource capacity</b>					
10	Cervical cancer guidelines	0-5	3	+1	Guidelines cover diagnosis. <sup>9</sup>
				+0	There is no evidence that guidelines include recommendations for the interval between diagnosis and initial treatment or include information on patient navigation procedures.
				+2	There is a clearly defined referral system for movement from primary care to secondary and tertiary care and an established programme linking individuals who have been diagnosed with HPV with prevention, treatment, and care resources. <sup>17</sup>
11	Breast cancer guidelines	0-3	1	+1	Guidelines cover diagnosis. <sup>11</sup>
				+0	There is no evidence that guidelines include recommendations for the interval between diagnosis and initial treatment or include information on patient navigation procedures.
12	Access to services in the public sector	0-6	3	+3	Access to biopsy, CT scanning and mammography is covered under the Z benefits of PhilHealth. There is not enough evidence that other diagnosis modalities are covered. <sup>22</sup>
13	Health system capacity	0-8	1	+1	Per 10,000 cancer patients, the Philippines has 3.6 external beam radiotherapy machines, 5.6 mammograms, 21.3 CT scanners and 2.2 MRI scanners. <sup>23</sup>
14	Workforce	0-6	3	+3	Per 10,000 cancer patients, the Philippines has 108 radiologists, 13 radiation oncologists and 177 surgeons. <sup>17</sup>
<b>Domain 4: Treatment and access</b>					
15	Cervical cancer guidelines	0-4	1	+1	Cervical cancer guidelines cover treatment, but they don't have a section on a referral pathway to supportive or palliative care services, do not specifically recommend treatment by a multidisciplinary team or provide information on shared decision making. <sup>9</sup>
16	Breast cancer guidelines	0-4	1	+1	Breast cancer guidelines cover treatment, but they don't have a section on a referral pathway to supportive or palliative care services, do not specifically recommend treatment by a multidisciplinary team or provide information on shared decision making. <sup>11</sup>
17	Access to services in the public sector	0-8	5	+5	Under universal healthcare in the public sector, patients in the Philippines have access to surgery, radiotherapy, psychosocial support, rehabilitations and palliative or hospice care. There is no evidence that fertility preservation, breast reconstruction, or surveillance for recurrence are covered. <sup>22,24</sup>
18	Cervical cancer drugs	0-5	3	+3	All cervical cancer drugs listed on the WHO Essential Cancer Drug List of 2021 (carboplatin, cisplatin and paclitaxel) are included in the Philippine national formulary essential medicines list and are reimbursed. However there is no evidence of innovative drugs beyond this list available. <sup>25</sup>
19	Breast cancer drugs	0-5	2	+2	Not all breast cancer drugs listed on the WHO Essential Cancer Drug List of 2021 are included in the Philippine national formulary essential medicines list (e.g. Vinorelbine), though all included drugs are reimbursed. There is no evidence of innovative drugs beyond this list available. <sup>25</sup>
<b>Domain 5: Awareness and education</b>					
20	Cervical cancer patient engagement	0-4	3	+2	The Philippine Cancer Society is a non-profit organisation that aims to reduce the incidence and mortality of cancer in the Philippines. They offer various programmes and services for cancer patients, including for cervical cancer, <sup>26</sup> and collaborate with the DoH in the National Cancer Control programme. <sup>27</sup>
				+1	The Philippine Cancer Society and the Cancer Coalition Philippines are two patient organisations that are listed as contributors to the development of the National Cancer Control Programme, and there is ongoing collaboration. <sup>27</sup> However there is no evidence that patient groups contributed to development of current clinical guidelines for cervical cancer. The Cancer Coalition and APWAI (a HIV Group) are part of the Consensus Panel of the ongoing guidelines due to be released soon.
21	Cervical cancer educational initiatives	0-9	6	+5	The Philippine Cancer Society has been producing educational programmes for cervical cancer that include awareness campaigns, leaflets and information dissemination for over 10 years, but there is no evidence that their effectiveness is tracked. <sup>28</sup> There is no evidence that education and awareness programmes for cervical cancer are integrated into primary health care settings. The Department of Health (DoH) has declared May as cervical cancer awareness month, which is a national campaign to help spread information. <sup>29</sup>
				+1	The Society of Gynecologic Oncologists of the Philippines provides research and clinical education on cervical cancer to both healthcare professionals and the public. <sup>30</sup>
22	Breast cancer patient engagement	0-4	4	+2	The Philippine Cancer Society, the Philippines Breast Cancer Network, the Philippine Foundation for Breast Care and the ICanServe Foundation all exist to support breast cancer patients in the Philippines. <sup>26,31-33</sup> The Philippine Cancer Society collaborate with the DoH in the National Cancer Control programme. <sup>27</sup>
				+2	The Philippine Cancer Society and the Cancer Coalition Philippines are two patient organisations that are listed as contributors to the development of the National Cancer Control Programme, and there is ongoing collaboration. <sup>27</sup> The ICanServe Foundation is listed as contributing to the recent breast cancer guidelines. <sup>11,33</sup>
23	Breast cancer educational initiatives	0-9	6	+5	The Philippine Foundation for Breast Care has provided educational programmes since 2008, known as the Boobie programs. <sup>24</sup> The Philippine Cancer Society has also been producing educational programmes for breast cancer that include awareness campaigns, leaflets and information dissemination for over 10 years, but there is no evidence that their effectiveness is tracked. <sup>28</sup> There is no evidence that education and awareness programmes for breast cancer are integrated into primary health care settings. The DoH established October as the national breast cancer awareness month, including several awareness-raising campaigns including free mammograms and CBEs. <sup>34</sup>
				+1	The Society of Gynecologic Oncologists of the Philippines provides research and clinical education on breast cancer to both healthcare professionals and the public. <sup>30</sup>

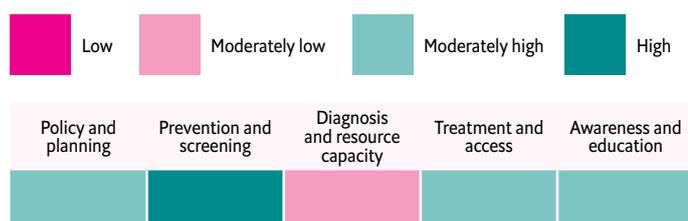


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## Women's cancer country snapshot Thailand

Thailand's scores are variable across the five domains, scoring moderately low in the diagnosis and resource capacity domain, but scoring in the highest bracket in the prevention and screening domain. There are therefore clear areas of focus for Thailand.



### Top opportunities for improvement in Thailand

#### 1. Introduce a dedicated national elimination plan for cervical cancer and a dedicated strategy for breast cancer in line with World Health Organisation (WHO) ambitions and targets.

- To aid with the implementation of cancer policy, a national elimination plan for cervical cancer and a national strategy for breast cancer could be established, which include specific targets and goals for prevention (for cervical cancer), screening, diagnosis and treatment.
- To support their development, help achieve elimination of cervical cancer and meet WHO numbers for breast cancer, more government priority could be given to women's cancers as key policy areas, by expanding the fiscal space for these cancers and including implementation and additional services under local budgets.
- A national steering committee could be established to operationalise inter-governmental ministry coordination to help drive the national elimination plan for cervical cancer and the national strategy for breast cancer.

#### 2. Introduce an organised, population-based screening programme for breast cancer as well as funded, risk-based mammography screening

- Thailand has a national HPV vaccination programme for primary prevention of cervical cancer, as well as a large-scale organised cervical cancer screening programme, in line with WHO recommendations. However the breast cancer screening programme remains opportunistic and is largely based around performing Breast Self-Examination (BSE) and Clinical Breast Examination (CBE). While mammography-based screening is also encouraged for women aged 40-69 years, it is not reimbursed and there is a lack of equipment and infrastructure. Uptake is low, highlighting a clear gap in implementation. Introducing organised screening, prioritising high-risk populations and offering mammography at no cost could help ensure the right women are targeted and diagnosed early.



### **3. Expand workforce and equipment capacity and distribution, especially in terms of screening**

- Compared to a relatively strong performance on other domains, there are clear opportunities for improvement in terms of capacity and distribution for both equipment and the cancer workforce, especially for breast cancer care. The country requires a greater number of diagnostic tools including mammograms and MRI scanners to adequately serve the number of cancer patients, especially in non-municipal and rural areas where patients visiting provincial hospitals often face long delays due to a low ratio of equipment to patients.
- The number of cancer specialists in the country is also low compared to the number of cancer patients, and insufficient numbers of radiologists (81 per 10,000 cancer patients<sup>1</sup> compared to 211 per 10,000 cancer patients in countries in Europe<sup>2</sup>) and pathologists limit screening capacity; this is especially the case outside of cities, in district and provincial hospitals in Thailand. While there are surgeons and medical oncologists at every centre hospital under the Ministry of Public Health, there is a need to increase care capacity and improve distribution through acceleration and expansion of specialist education for example, to limit delays and long waiting lists.

### **4. Focus on increasing access to advanced therapies**

- Despite advances in achieving universal healthcare coverage in Thailand, many patients continue to face delays in access to more innovative targeted therapies and immunotherapy, since the reimbursement system is complex and fragmented. Given their significant benefits, access to these more advanced therapies is important for patients, and renewed focus could be given to ensuring equal access, providing more affordable drug prices, and introducing timely, performance-based reimbursement in order to reduce disparities and improve cancer outcomes in the country.

### **5. Ensure the contribution of patient organisations to the development of National Cancer Control Plans (NCCPs) and clinical guidelines**

- Patient organisations have an important role to play in cancer control, by raising awareness, educating, and empowering people living with cancer. However in Thailand there is room for patient organisations to play a bigger role in informing policy decisions, and a place to start could be to include them in the development of NCCPs and clinical guidelines.



Women's cancer country snapshot: **Thailand**

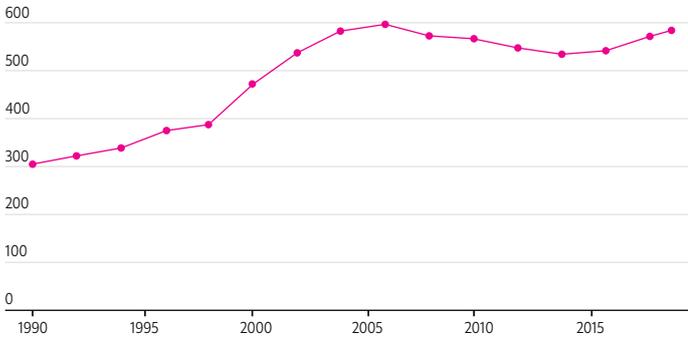
**Burden, incidence and mortality in Thailand**

Breast cancer			
	Thailand	Asia	World
Age-standardised incidence per 100 000 women (2020)	37.8	36.8	47.8
Age-standardised mortality per 100 000 women (2020)	12.7	11.9	13.6
Cumulative risk of breast cancer, ages 0-74 (2020)	4.12	3.98	5.2

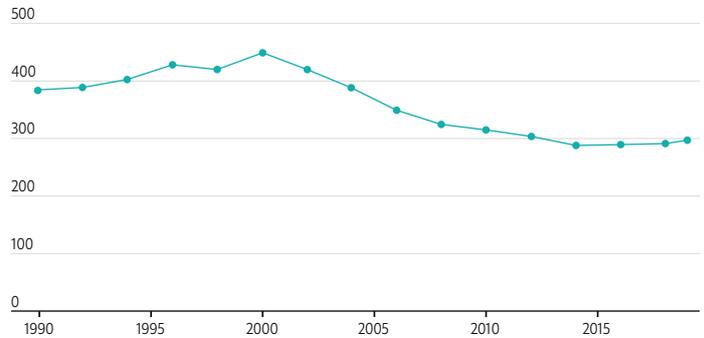
Source: Globocan 2020<sup>3</sup>

Cervical cancer			
	Thailand	Asia	World
Age-standardised incidence per 100 000 women (2020)	16.4	12.7	13.3
Age-standardised mortality per 100 000 women (2020)	7.4	7.1	7.3
Cumulative risk of cervical cancer, ages 0-74 (2020)	1.70	1.35	1.39

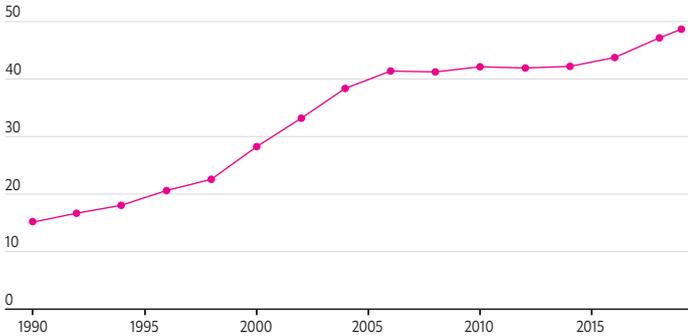
**Breast cancer burden trend, DALY's per 100,000, all ages**



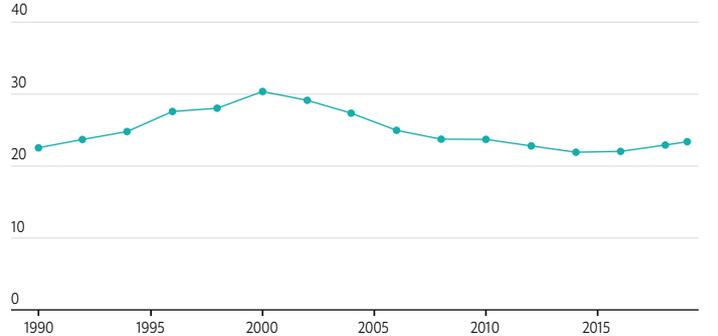
**Cervical cancer burden trend, DALY's per 100,000, all ages**



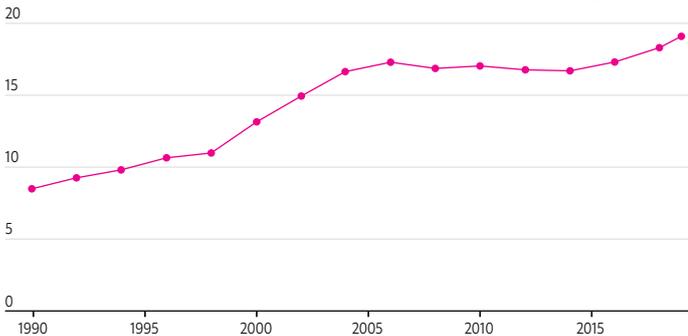
**Breast cancer incidence trend, new cases per 100,000, all ages**



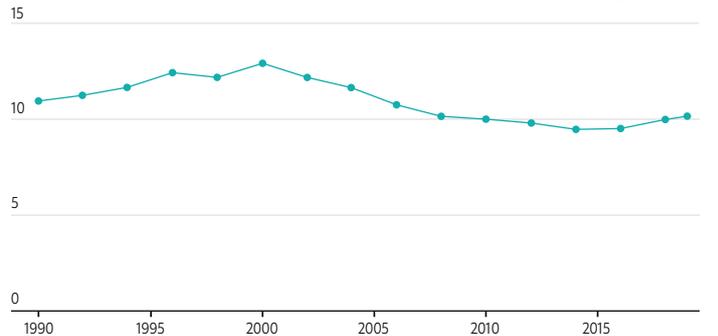
**Cervical cancer incidence trend, new cases per 100,000, all ages**



**Breast cancer mortality trend, deaths per 100,000, all ages**



**Cervical cancer mortality trend, deaths per 100,000, all ages**



Source: Global Burden of Disease, 2019<sup>4</sup>



## Scorecard results

Indicator	Range	Score	Justification		
<b>Domain 1: Policy and planning</b>					
1	Cancer control plan	0-5	2	+2	The National Cancer Institute (NCI) of Thailand developed The National Cancer Control Program (NCCP) which was last updated in 2018 for 2018-2022. <sup>5</sup>
				+0	There is no evidence of a specific elimination plan for cervical cancer or dedicated strategy solely for breast cancer.
2	Comprehensiveness	0-5	4	+4	The National Programme on NCD Prevention includes goals, objectives and priority evidence-based interventions in relation to prevention, early detection and diagnosis, treatment and palliative care, but there is no evidence of goals related to survivorship. <sup>5,6</sup>
3	Implementation plan	0-7	2	+2	The NCCP has goals with measurable objectives pertaining to each section, <sup>5</sup> and clear performance indicators (targets) for cervical cancer screening. <sup>7</sup>
				+0	There is not enough evidence of a clear implementation plan or explicit 2030 targets for reaching cervical cancer elimination and there is no evidence of a long-term surveillance system to monitor effectiveness and impact of interventions and activities for cervical or breast cancer control.
4	Population-based cancer registry	0-7	4	+3	Thailand has 15 Population-based cancer registries (PBCRs) which cover approximately 31% of the total population. The Ministry of Public Health (MoPH) has proposed a hospital-based cancer registry (HBCR) for every provincial hospital. <sup>8</sup> There is no evidence of a specific PBCR solely for breast and/or cervical cancer.
				+1	The PBCR is linked to the National Health Security Database. <sup>8</sup>
5	Cervical cancer clinical guidelines	0-3	2	+2	Thailand has clinical practice guidelines for cervical cancer which were last updated in 2018. <sup>9</sup>
6	Breast cancer clinical guidelines	0-3	2	+2	Thailand has clinical practice guidelines for breast cancer which were last updated in 2018. <sup>10</sup>
<b>Domain 2: Prevention and screening</b>					
7	HPV vaccination programme	0-7	7	+3	The national HPV vaccination programme for primary prevention of cervical cancer was introduced in 2017, and is in line with WHO recommendations. <sup>8</sup>
				+4	HPV vaccination in Thailand has a coverage of 95% and is fully funded for the target population. <sup>8</sup>
8	Cervical cancer screening programme	0-16	16	+4	Opportunistic screening programmes are available in private and public hospitals. <sup>11</sup> Organised screening for cervical cancer is also in place. <sup>8</sup>
				+7	Since 2020, HPV DNA testing has been the primary screening test which is in line with WHO recommendations. <sup>12</sup> Cervical cancer screening is fully funded under the Thai Universal Coverage scheme, which has contributed to the high uptake (>70%) of screening between 2005-2014. <sup>12</sup>
				+3	Thailand has a screening registry which tracks women's history of screening.
				+2	Self-sampling of HPV testing exists as a part of the cervical cancer screening programme. <sup>12</sup>
9	Breast cancer screening programme	0-10	7	+2	Thailand has had an opportunistic screening programme for breast cancer since 2004, but no organised screening. The opportunistic programme was further expanded in 2014 to include mobile health units supporting screening for women between 30-70 years of age. <sup>13</sup>
				+4	The uptake of breast cancer screening was ~58% in 2009, and Clinical Breast Examination (CBE) is fully covered under the Thai Universal Coverage scheme. <sup>14,13</sup>
				+1	CBE is used at the public primary health care level for women aged 40-70 years, with mammography as an opportunistic approach if any abnormality is suspected by CBE. <sup>8</sup>
<b>Domain 3: Diagnosis and resource capacity</b>					
10	Cervical cancer guidelines	0-5	2	+1	Guidelines cover diagnosis <sup>9</sup> , but there is no evidence of recommendations for the interval between diagnosis and initial treatment, or of established linkage programmes for HPV diagnosed individuals with prevention, treatment and care resources. There is not enough evidence to suggest that patient navigation procedures exist in the guidelines for cervical cancer.
				+1	There is a clearly defined referral system for movement from primary care to secondary and tertiary care. <sup>15</sup>
11	Breast cancer guidelines	0-3	1	+1	Guidelines cover diagnosis <sup>16</sup> , but there is no evidence of recommendations for the interval between diagnosis and initial treatment, or of patient navigation procedures.
12	Access to services in the public sector	0-6	5	+5	CT scanning, BRCA testing, diagnostic mammograms, biopsy and biomarker testing are reimbursed under Universal Health Care (UHC), though next generation sequencing is not. <sup>17,18</sup>
13	Health system capacity	0-8	2	+2	Per 10,000 cancer patients, Thailand has 5.9 external beam radiotherapy machines, 12.6 mammograms, 24.1 CT scanners, and 3.7 MRI scanners. <sup>19</sup>
14	Workforce	0-6	2	+2	Per 10,000 cancer patients, Thailand has 81 radiologists, 4 radiation oncologists, and 251 surgeons. <sup>1</sup>



## Scorecard results

Indicator	Range	Score	Justification		
<b>Domain 4: Treatment and access</b>					
15	Cervical cancer guidelines	0-4	3	+3	Cervical cancer guidelines cover treatment, recommend treatment by a multidisciplinary team, and include a referral pathway to supportive or palliative care services. <sup>24,13</sup> Though it is stated that the guidelines can be used to improve communication and shared decision-making between healthcare providers and patients, it is not outlined as a recommendation.
16	Breast cancer guidelines	0-4	3	+3	Breast cancer guidelines cover treatment, shared decision making, and include a referral pathway to supportive or palliative care services, but there is no evidence of recommending treatment by a multidisciplinary team. <sup>14</sup>
17	Access to services in the public sector	0-8	6	+6	Under the NCCP, surgery, radiotherapy, rehabilitation, and palliative or hospice care are available in the public sector. There is no evidence of psychosocial or mental health support, fertility preservation, breast reconstruction or surveillance for recurrence being available in the public sector. <sup>25,26</sup>
18	Cervical cancer drugs	0-5	4	+4	All cervical cancer drugs listed on the WHO Essential Cancer Drug List of 2021 (carboplatin, cisplatin and paclitaxel) are included in the Thailand National Essential Medicines List of 2022 though they are not all fully reimbursed. There is no evidence of innovative drugs beyond this list being available. <sup>27,28</sup>
19	Breast cancer drugs	0-5	3	+3	Not all breast cancer drugs listed on the WHO Essential Cancer Drug List of 2021 are included in the Thailand National Essential Medicines List of 2022 (e.g. Vinorelbine). Included drugs are not all fully reimbursed. There is no evidence of innovative drugs beyond this list being available. <sup>27,28</sup>
<b>Domain 5: Awareness and education</b>					
20	Cervical cancer patient engagement	0-4	2	+2	Independent patient organisations such as the Thai Cancer Society which cover cervical cancer exist. Cancer awareness campaigns like Run Over Cancer and other screening campaigns are conducted in partnership with policy groups such as the National Health Organisation. <sup>26</sup>
				+0	Evidence could not be found to suggest that patient organisations contribute to clinical guidelines for cervical cancer, or participate in the development of the NCCP.
21	Cervical cancer educational initiatives	0-9	9	+5	The National Health Security Office (NHSO) through the Ministry of Health has organised education programmes that are incorporated into the cervical cancer screening program, since 2005. Mechanisms to determine the effectiveness of the education programme are available (e.g. measuring screening uptake). <sup>11</sup>
				+3	Community-based outreach service programmes run by the government are part of the cervical cancer screening programme, and have been integrated into primary health care settings. <sup>11</sup>
				+1	The cervical cancer screening programme in Thailand covers clinical educational programmes targeted towards healthcare professionals and providers. <sup>11</sup>
22	Breast cancer patient engagement	0-4	2	+2	Thailand Breast Cancer Community (TBBS) and Thai Cancer Society are independent patient organisations covering breast cancer. Cancer awareness campaigns like Run Over Cancer and other campaigns are conducted in partnership with policy groups like National Health Organisation. <sup>26</sup>
				+0	Evidence could not be found to suggest that patient organisations contribute to clinical guidelines for breast cancer, or participate in the development of the NCCP.
23	Breast cancer educational initiatives	0-9	7	+4	Education and awareness initiatives such as the People's Hope Japan project (2010-2013) and Mobile Breast Cancer Screening Units launched by the government in 2014, exist in Thailand. Cancer screening surveillance registry in the public sector are effective mechanisms that exist to determine effectiveness of these educational programmes. <sup>27,28</sup>
				+1	Civil society organisation Queen Sirikit Center for Breast Cancer (QSCBC) has conducted community-based outreach programmes every October since 2008 to raise awareness, but there remains a lack of government-run initiatives. <sup>29</sup>
				+1	Education and awareness programmes are integrated into the breast cancer screening programme, run by the Ministry of Public Health. <sup>30</sup>
				+1	Clinical education programmes for health care professionals are provided by the Thai Ministry of Health. An education programme on germline BRCA 1/2 testing also exists for genetic counsellors. <sup>18</sup>



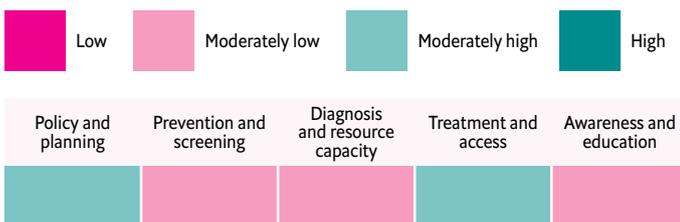
## Women's cancer country snapshot: Thailand

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## Women's cancer country snapshot Vietnam

Vietnam's scores are variable across the five domains, scoring moderately low in three domains and moderately high in domain one on policy and planning and domain four on treatment and access. There are therefore clear areas of focus for Vietnam.



### Top opportunities for improvement in Vietnam

#### 1. Introduce implementation and surveillance plans within the dedicated national elimination plan for cervical cancer and introduce a national strategy for breast cancer in line with World Health Organisation (WHO) ambitions and targets

- Vietnam has a National Action Plan on Prevention and Control of Cervical Cancer which has been in place since 2016. However, without surveillance systems in place to track interventions and activities and track progress on vaccination, screening and patient outcomes, it is difficult to monitor the effectiveness of this plan and know whether programmes for cancer control are working. Long-term surveillance systems could be set up to track successes and suggest improvements.
- To aid with the implementation of breast cancer policy, a national strategy for breast cancer could also be established, which would include specific targets and goals for screening, diagnosis and treatment.
- To support their development, help achieve elimination of cervical cancer and meet WHO numbers for breast cancer, more government priority could be given to women's cancers as key policy areas, by expanding the fiscal space for these cancers and including implementation and additional services under local budgets.
- A national steering committee could be established to operationalise inter-governmental ministry coordination to help drive the national elimination plan for cervical cancer and the national strategy for breast cancer.

#### 2. Establish a national Human Papillomavirus (HPV) immunisation programme for cervical cancer prevention

- Introducing HPV vaccination as part of Vietnam's routine immunisation programme for girls aged 9-14 years (through a school-based programme or community-based strategy) as soon as possible would help meet the WHO's 2030 target of vaccinating 90% of girls by the age of 15 (it is currently scheduled for 2026).
- Sufficient and affordable HPV vaccines will need to be secured, and international partnerships and support from global funders could be considered to help meet vaccination targets.
- Monitoring systems and vaccination registers could be introduced to help ensure that high coverage for vaccination is met, as well as education and awareness programmes on the importance of HPV vaccination for preventing cervical cancer to alleviate stigma.



### 3. Roll out organised, population-based national screening programmes in line with WHO recommendations

- For cervical cancer, currently opportunistic screening exists in Vietnam using cytology as the primary screening test, and organised screening projects exist in some provinces. Screening through HPV DNA testing is the recommended primary screening tool in all settings due to its high sensitivity, and the country would do well to transition away from using cytology, in line with recommendations by the WHO. To increase uptake, active invitation to screening could be introduced nationally in the form of an organised programme, and consideration could be given to integrating screening with existing services such as family planning consultations or women's health clinics, as this would also reduce transport costs and waiting time. Additionally, HPV self-sampling could be introduced as an option, especially for women living in rural or hard-to-reach areas.
- For breast cancer, currently no nationwide screening programme exists in Vietnam. To help ensure high breast cancer screening coverage of women (especially those in the at-risk age group), an organised, population-based screening programme could be introduced, including mammography screening for high-risk women. Raising awareness of women in the community and improving the knowledge of health-care providers in primary care would also help ensure the right women are targeted and diagnosed early.

### 4. Invest in the country's infrastructure and workforce capacity and increase and expand access to advanced therapies

- In Vietnam, though Social Health Insurance (SHI) provides access to the majority of diagnostic services, there are low numbers of diagnostic equipment (radiotherapy machines, mammograms, CT scanners etc.) as well as extremely low numbers of cancer specialists, which impact the country's capacity to diagnose and treat breast and cervical cancer. A study from 2010 found that 10 out of 63 provincial hospitals in Vietnam were unable to provide services for patients with cancer,<sup>1</sup> meaning the health-care system with its limited resources cannot meet the demand for cancer services in Vietnam. Shortages are particularly evident in the mountainous and remote areas.

- To counter these shortages, there is a need for capacity-building at the lower levels of the health system to ensure cervical and breast cancer patients are sufficiently supported. There is also a need to increase care capacity through acceleration and expansion of specialist education, and through improving the availability, accessibility and distribution of diagnostic services.
- Although Vietnam scores well in access to basic patient care and services, with SHI providing all Vietnamese people with access to surgery, radiotherapy and chemotherapy, challenges are faced when accessing more advanced therapies (such as some targeted therapies), for which there is only partial reimbursement. Vietnam also faces obstacles when it comes to registration and reimbursement approvals for new drugs for more advanced treatment compared to surrounding countries, where there is room for improvement to enable more patients to have access.

### 5. Embark on systematic collaboration with patient organisations, including on the development of National Cancer Control Plans (NCCPs) and clinical guidelines for both breast and cervical cancer

- While civil society organisations in Vietnam run several community-based outreach service programmes for women's cancers, there is a lack of government-run initiatives and collaboration. Additionally, independent patient organisations are not involved in the development of NCCPs and clinical guidelines, which means an important voice is missing.

## Women's cancer country snapshot: Vietnam



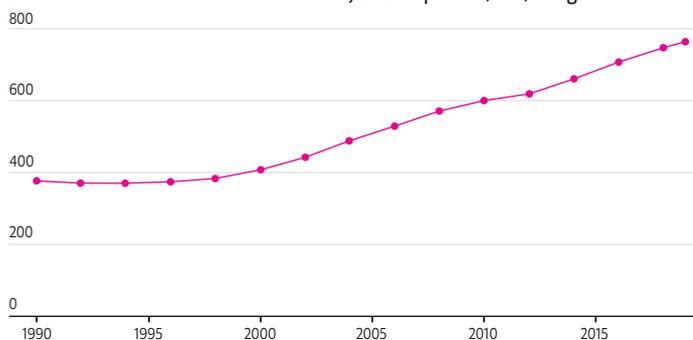
### Burden, incidence and mortality in Vietnam

Breast cancer			
	Vietnam	Asia	World
Age-standardised incidence per 100 000 women (2020)	34.2	36.8	47.8
Age-standardised mortality per 100 000 women (2020)	13.8	11.9	13.6
Cumulative risk of breast cancer, ages 0-74 (2020)	3.69	3.98	5.2

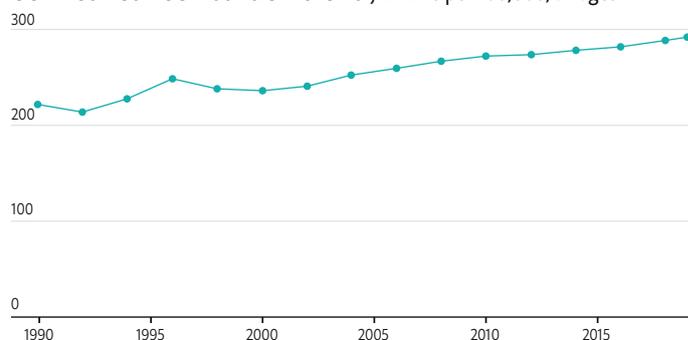
Source: Globocan 2020<sup>2</sup>

Cervical cancer			
	Vietnam	Asia	World
Age-standardised incidence per 100 000 women (2020)	6.6	12.7	13.3
Age-standardised mortality per 100 000 women (2020)	3.4	7.1	7.3
Cumulative risk of cervical cancer, ages 0-74 (2020)	0.70	1.35	1.39

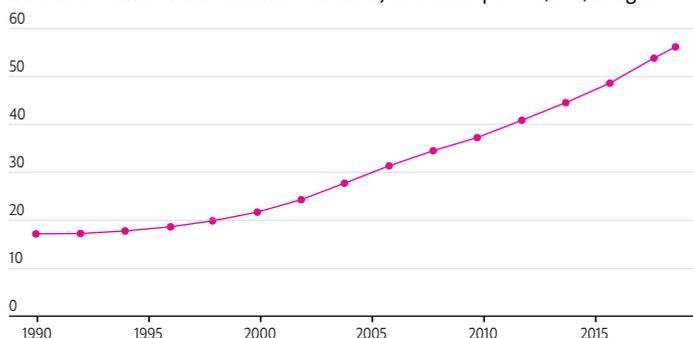
#### Breast cancer burden trend, DALY's per 100,000, all ages



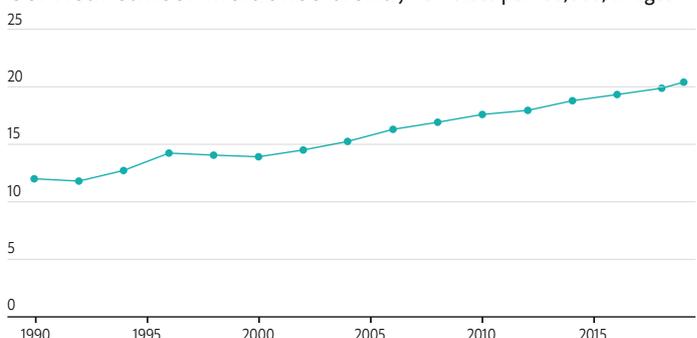
#### Cervical cancer burden trend, DALY's per 100,000, all ages



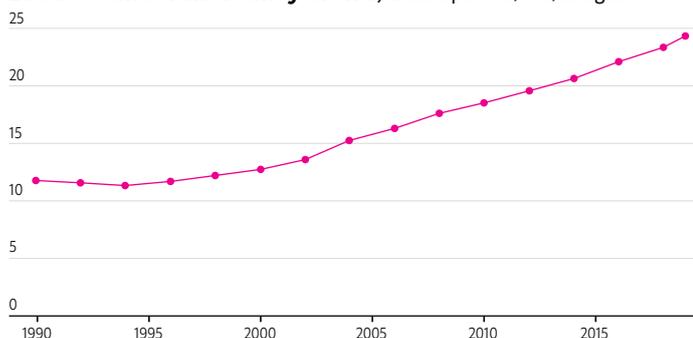
#### Breast cancer incidence trend, new cases per 100,000, all ages



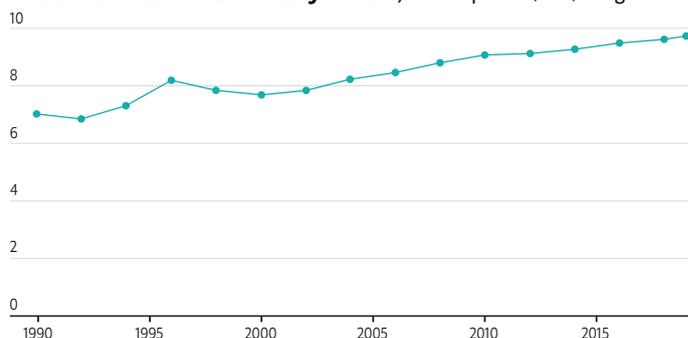
#### Cervical cancer incidence trend, new cases per 100,000, all ages



#### Breast cancer mortality trend, deaths per 100,000, all ages



#### Cervical cancer mortality trend, deaths per 100,000, all ages



Source: Global Burden of Disease, 2019<sup>3</sup>



## Scorecard results

Indicator	Range	Score	Justification		
<b>Domain 1: Policy and planning</b>					
1	Cancer control plan	0-5	2	+1	The National Cancer Control Program (NCCP) was first developed in 2008. A new detailed NCCP to amend the 2008 version is in development, and will be merged into the National Programme on Non-communicable Disease (NCD) Prevention and Control for 2022-2025. <sup>4,5</sup>
				+1	The National Action Plan on Prevention and Control of Cervical Cancer was released by the Vietnamese government for the years 2016-2025. <sup>6</sup> There is no evidence of a specific plan or strategy solely for breast cancer. <sup>7</sup>
2	Comprehensiveness	0-5	4	+4	The National Programme on NCD Prevention includes goals, objectives and priority evidence-based interventions in relation to prevention, early detection and diagnosis, treatment and palliative care, but there is no evidence of goals relating to survivorship. <sup>4</sup>
3	Implementation plan	0-7	3	+2	The National Programme on NCD Prevention includes an implementation plan <sup>1</sup> and measurable goals under its National Cancer Control Plan. <sup>4</sup> There is no evidence of long-term surveillance systems to monitor effectiveness and impact of interventions and activities for cervical or breast cancer control.
				+1	The NCCP mentions explicit targets around cervical cancer screening, HPV vaccination, cytological testing and awareness- to help reach meet 2030 targets and eventual cervical cancer elimination. <sup>8</sup>
4	Population-based cancer registry	0-7	3	+2	Vietnam has two regional population based cancer registries (PBCRs) and seven hospital-based cancer registries which cover approximately 20% of the Vietnamese population. <sup>9</sup> There is no evidence of a specific PBCR solely for breast and/or cervical cancer.
				+1	The PBCR is linked to the data of Vietnam Social Security (VSS) by health insurance IDs. <sup>10</sup>
5	Cervical cancer clinical guidelines	0-3	2	+2	Vietnam's clinical guidelines for cervical cancer are available as part of broader cancer guidelines, last updated in 2020. <sup>11</sup>
6	Breast cancer clinical guidelines	0-3	2	+2	Vietnam's clinical guidelines for breast cancer were last updated in 2020. <sup>12</sup>
<b>Domain 2: Prevention and screening</b>					
7	HPV vaccination programme	0-7	2	+1	HPV vaccination is currently not included in the national immunisation plan, however, the government has plans to add it to the Expanded Immunization Program (2021-2030) in 2026. <sup>13</sup> There is not enough evidence about the coverage for the vaccine.
				+1	Where it is currently available, HPV vaccination is available at a subsidized rate for girls. <sup>14</sup>
				+0	Guidelines are not in line with WHO recommendations as currently they do not contain specific recommendations for a vaccination schedule.
8	Cervical cancer screening programme	0-16	5	+3	An opportunistic screening programme exists as part of the National Action Plan on Prevention and Control of Cervical Cancer. <sup>6</sup> Organised screening projects exist in some provinces for the period 2019-2025. <sup>15</sup>
				+1	Cytology is the recommended primary screening test for cervical cancer. <sup>16</sup>
				+1	A pilot was undertaken in Hanoi to survey acceptance of self-sampling for HPV testing. <sup>17</sup>
				+0	No screening registry for cervical cancer exists <sup>18</sup> , and there is no clear evidence on whether screening is fully or partially funded.
				+0	Screening uptake of cervical cancer is on average ~15% for women under 35 and ~30% for women under 45. <sup>15</sup>
9	Breast cancer screening programme	0-10	4	+1	Vietnam does not have a national opportunistic or organised screening programme for breast cancer. <sup>19</sup> However, since 2008, the Ministry of Health (MoH) and National Cancer Hospital have been running breast cancer screening activities under the National NCD plan. <sup>20</sup>
				+1	Clinical Breast Examination (CBE) is used at all district health care facilities, while mammography is reserved for level 2 hospitals (provinces, centrally run cities) or higher by MoH. <sup>21</sup>
				+2	The National Cancer Control Programme offers free screening for all women (CBE, ultrasound, and mammography in case of referral). <sup>7</sup>
				+0	Evidence could not be found on the rate of screening uptake.



## Scorecard results

Indicator	Range	Score	Justification		
<b>Domain 3: Diagnosis and resource capacity</b>					
10	Cervical cancer guidelines	0-5	3	+2	Guidelines cover diagnosis and include information on patient navigation procedures, but evidence could not be found on a recommendation for the interval between diagnosis and initial treatment. <sup>11</sup>
				+1	There is a clearly defined referral system for movement from primary care to secondary and tertiary care. <sup>18</sup>
				+0	Evidence could not be found on established programmes linking individuals who have been diagnosed with HPV with prevention, treatment, and care resources. <sup>18</sup>
11	Breast cancer guidelines	0-3	1	+1	Guidelines cover diagnosis <sup>12</sup> , but evidence could not be found of recommendations for the interval between diagnosis and initial treatment, nor is there evidence of information on patient navigation procedures.
12	Access to services in the public sector	0-6	5	+5	Social Health Insurance (SHI) provides access to diagnostic services (e.g. biomarker testing, CT scanning and BRCA testing) and the National Cancer Control Programme offers free mammography. Biopsy is mentioned as a service available under public healthcare. <sup>22,23</sup>
				+0	There is not enough evidence available on whether next generation sequencing is covered under public healthcare in Vietnam.
13	Health system capacity	0-8	0	+0	Per 10,000 cancer patients, Vietnam has 2.2 external beam radiotherapy machines, 7.3 CT scanners, and 3.1 MRI scanners. There is not enough evidence on the number of mammograms available. <sup>24</sup>
14	Workforce	0-6	3	+3	Per 10,000 cancer patients, Vietnam has 194 radiologists and 7 radiation oncologists. There is not enough evidence on the number of surgeons available. <sup>16</sup> There is not enough evidence on the number of surgeons available. <sup>16</sup>
<b>Domain 4: Treatment and access</b>					
15	Cervical cancer guidelines	0-4	4	+4	Cervical cancer guidelines cover treatment, recommend treatment by a multidisciplinary team, include a referral pathway to supportive or palliative care services, and include recommendations on shared decision making. <sup>11,25</sup>
16	Breast cancer guidelines	0-4	3	+3	Breast cancer guidelines cover treatment, recommend treatment by a multidisciplinary team and include recommendations on shared decision making, but there is no evidence of inclusion of a referral pathway to supportive or palliative care services. <sup>12,25</sup>
17	Access to services in the public sector	0-8	6	+6	Social Health Insurance (SHI) provides all Vietnamese people access to surgery, radiotherapy, breast reconstruction, rehabilitation, psychological/mental health support, and palliative/hospice care. There is not enough evidence on whether fertility preservation and surveillance for recurrence are covered under public healthcare. <sup>22,26</sup>
18	Cervical cancer drugs	0-5	4	+4	All cervical cancer drugs listed on the WHO Essential Cancer Drug List of 2021 are included in the Vietnamese National List of Essential Medicines, and are fully reimbursed by SHI. <sup>27</sup> Innovative drugs beyond this list (e.g. bevacizumab, pembrolizumab and topotecan) are available, but are not fully reimbursed. <sup>28</sup>
19	Breast cancer drugs	0-5	3	+3	All breast cancer drugs listed on the WHO Essential Cancer Drug List of 2021 are included in the Vietnamese National List of Essential Medicines, but are not all fully reimbursed by SHI. <sup>22,27</sup> Innovative drugs beyond this list (e.g. atezolizumab, pembrolizumab, robociclib and palbociclib) are available, but are not fully reimbursed. <sup>28</sup> beyond this list are available but are not reimbursed. <sup>25</sup>
<b>Domain 5: Awareness and education</b>					
20	Cervical cancer patient engagement	0-4	0	+0	Though 'cancer clubs' exist, <sup>29</sup> there is no evidence of any independent patient organisations for cervical cancer or joint programmes between patient groups or/and policy groups exist in Vietnam and legal regulation for the establishment of patient organisations or advocacy groups do not exist.
				+0	There is no evidence that independent patient organisations covering cervical cancer contribute to clinical guidelines or/and participate in developing the National Cancer Control Plan.
21	Cervical cancer educational initiatives	0-9	5	+2	The National Institute for Cancer Control in Vietnam provides educational programmes on cervical cancer. <sup>30</sup> The Advancing Cancer Control in Vietnam Project implemented health education schemes to improve community awareness, but were limited in their scope and lasted only 3 years. <sup>31</sup> The project also included analysis, monitoring and screening registry systems that helped determine the effectiveness of the educational programme.
				+1	Civil society organisation, HerHealthEQ runs community-based outreach service programmes for cervical cancer, but there remains a lack of government-run initiatives. <sup>32</sup>
				+1	The National Institute for Cancer Control in Vietnam provides support to healthcare professionals and providers. <sup>33</sup>
				+1	The Bac Lieu Department of Health held training for staff on screening and early detection of cervical cancer at the grassroots level, integrating education and awareness programmes for cervical cancer into primary health care settings. <sup>34</sup>
22	Breast cancer patient engagement	0-4	1	+1	The Breast Cancer Network of Vietnam (BCNV) and Resilient Women's Club are non-governmental organisations that cover breast cancer. <sup>35</sup> There is no evidence of joint programmes between patient groups and policy groups as legal regulation for the establishment of patient organisations or advocacy groups do not exist.
				+0	There is no evidence that independent patient organisations covering breast cancer contribute to clinical guidelines or/and participate in developing the National Cancer Control Plan.
23	Breast cancer educational initiatives	0-9	7	+4	Educational programmes for breast cancer exist such as those provided by BCNV, "We Care for HER" (started in 2013) and recently, "Joining hands for HER". Government run initiatives are limited according to the Advancing Cancer Control in Vietnam Project. The project also included analysis, monitoring and screening registry systems that helped determine the effectiveness of the educational programme. <sup>31,36</sup>
				+1	BCNV runs several community-based outreach service programmes for breast cancer, <sup>37</sup> but there remains a lack of government-run initiatives.
				+1	The National Institute of Cancer implements a comprehensive education and awareness programme for breast cancer that is integrated into primary health care settings. <sup>33</sup>
				+1	The National Institute for Cancer Control in Vietnam provides support to healthcare professionals and providers. <sup>33</sup>



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