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A photograph of a doctor in a white lab coat with a stethoscope around their neck. The doctor is holding a black pen and appears to be in a consultation with a patient whose hands are visible in the foreground. The background is a bright, out-of-focus window.

CANCER PREPAREDNESS IN ASIA-PACIFIC

Progress towards universal cancer control

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About this report

Cancer preparedness in Asia-Pacific: Progress towards universal cancer control is a report written by The Economist Intelligence Unit and sponsored by Roche. It looks at different responses to the cancer challenge in Asia-Pacific and the essential elements needed to enhance preparedness in the region. The ten countries included in this study were chosen based on various factors including size, income-level diversity and progress made towards universal health coverage (UHC): Australia, China, India, Indonesia, Japan, Malaysia, the Philippines, Thailand, South Korea and Vietnam. The report is based on several strands of research, as follows.

First, it explores the findings of The Economist Intelligence Unit's Asia-Pacific Index for Cancer Preparedness (ICP). This regional index was created with an advisory board of experts. It draws upon the findings of the global ICP (which evaluated 28 countries based on 45 separate indicators) to provide a comprehensive overview of how well the ten included countries are doing in the key areas of this challenge.

Additionally, we conducted interviews with ten senior health system officials, planning experts, clinicians and cancer control specialists. Finally, supporting the research and feeding into this publication has been substantial desk research for further study of specific topics that the ICP and interviews raised.

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Findings in context: Impact of the covid-19 pandemic on cancer care

The covid-19 pandemic which emerged in early 2020 has drastically impacted how life, business and healthcare are conducted. The immediate impact on health systems across the world has been substantial. Where emphasis has necessarily been put on managing covid-19 patients, elective and non-essential health services have been disrupted. Countries in Asia—the region where the pandemic first emerged—have seen varying levels of disruption.

Cancer patients, particularly those undergoing chemotherapy who may have compromised immune systems, are at increased risk of covid-19-related complications and death.^{i,ii} This represents a particular challenge for lung cancer patients who are already vulnerable to respiratory diseases.ⁱⁱⁱ The risk factors for covid-19 and cancer also see some overlap. For example, older people are at higher risk of both conditions, and people who smoke tobacco are at increased risk of respiratory infections and are more likely to develop severe disease with covid-19 compared with non-smokers.^{iv} Given a lack of experience and clinical data, the identification of appropriate interventions for patients with cancer infected with covid-19 remains an ongoing challenge.^v

More broadly, the impact of covid-19 on cancer service delivery such as screening, diagnosis, treatment and end-of-life care is a concern across Asia-Pacific. Tokyo's National Cancer Center Hospital halted screening programmes in March 2020, and will only resume full screening capacity by October 2020.^{vi} The Philippines has grappled with organising the transition of cancer care where tertiary centres have been designated as covid-19 referral centres.^{vii} In Korea, palliative care capacity for cancer patients has been reduced as inpatient hospices are used as centres for covid-19 patients.^{viii}

Furthermore, the disruption to clinical research in cancer, and ethical considerations researchers have towards balancing non-abandonment of trial participants and actions to implement physical distancing and stop covid-19 spread, are areas of real concern.^{ix} Meanwhile, approvals of cancer medicines—for example the first-line use of some immune checkpoint inhibitors in South Korea—have been delayed.^x

ⁱ Dai M, *et al.* "Patients with cancer appear more vulnerable to SARS-CoV-2: a multi-center study during the COVID-19 outbreak," *Cancer Discovery*, 2020.

ⁱⁱ Liang W, *et al.* "Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China," *Lancet Oncol*, 2020.

ⁱⁱⁱ Xu U, *et al.* "Clinical Management of Lung Cancer Patients During the Outbreak of 2019 Novel Coronavirus Disease (COVID-19)," *Zhongguo Fei Ai Za Zhi*, 2020.

^{iv} World Health Organization. "WHO statement: Tobacco use and COVID-29," May 2020. Available from: <https://www.who.int/news-room/detail/11-05-2020-who-statement-tobacco-use-and-covid-19> (Accessed Jun 2020).

^v Peng L, *et al.* "Managing patients with cancer in the COVID-19 era," *Eur J Cancer*, 2020.

^{vi} Japan Times. "COVID-19 crisis halts cancer screenings in Japan." Jun 2020. Available from: <https://www.japantimes.co.jp/news/2020/06/08/national/science-health/covid-19-cancer-screenings> (Accessed Jun 2020).

^{vii} Ting FI, *et al.* "Treatment of cancer patients during the COVID-19 pandemic in the Philippines," *ecancer*, 2020.

^{viii} Lee J. "How COVID-19 Is Affecting Oncology Practice in South Korea," ONS Voice, May 2020. Available from: <https://voice.ons.org/stories/how-covid-19-is-affecting-oncology-practice-in-south-korea> (Accessed Jun 2020).

^{ix} Shuman A, *et al.* "Cancer research ethics and COVID-19," *Oncologist*, 2020.

^x *Ibid.* Lee J.

Taken together, there is a concern of a 'mini tsunami' of cancer cases after treatment delays or new patients who were reluctant to seek medical care return to healthcare settings at a time resources for cancer services are diverted to covid-19-related healthcare.^{xi}

In response to this disruption, new ways of working are emerging. In April 2020, an international group of cancer specialists published practical recommendations on the management of cancer patients during the pandemic.^{xii} In addition, the opportunities to

deliver outpatient services in new formats—such as care coordination via telemedicine and remote delivery of medicines—are becoming increasingly recognised.^{xiii}

The analysis of the *Index of Cancer Preparedness Asia-Pacific* presented here, represents a time point pre-pandemic, however the key findings and priorities for addressing cancer control provision have now been thrown into sharper focus, and should be interpreted in light of the unfolding health system and economic impacts that the pandemic has wrought.

^{xi} Segelov E, "How COVID-19 is impacting cancer treatment in Australia: challenges of 'waiting for the storm'," *ecancer News*, Apr 2020. Available from: <https://ecancer.org/en/news/17710-how-covid-19-is-impacting-cancer-treatment-in-australia-challenges-of-waiting-for-the-storm> (Accessed Jun 2020).

^{xii} Humaid Al-S, *et al.* "A Practical Approach to the Management of Cancer Patients During the Novel Coronavirus Disease 2019 (COVID-19) Pandemic: An International Collaborative Group," *The Oncologist*, 2020.

^{xiii} *Ibid.*

Executive summary

The cancer burden in Asia-Pacific is significant with an estimated 8.8m new cases in 2018. With changing demographics associated with ageing populations and changing lifestyles, this burden is only set to grow. Countries in the vast Asia-Pacific region show great diversity in their healthcare needs, and responses to cancer are highly influenced by their stage of economic development. High-income countries with established healthcare infrastructures are primarily dealing with quality of care concerns. Upper-middle-income countries are refining their universal health coverage (UHC) systems to close access gaps and ensure financial sustainability. Lower-middle-income countries are setting up the foundations for an increasingly important cancer challenge.

This Economist Intelligence Unit report, sponsored by Roche, looks at the complexities of the cancer challenge facing ten countries in the Asia-Pacific region: Australia, China, India, Indonesia, Japan, Malaysia, Philippines, South Korea, Thailand and Vietnam. The study examines the findings from The Economist Intelligence Unit's Index of Cancer Preparedness (ICP)—Asia-Pacific. It draws on a wide range of data relevant to cancer policy and control. The ICP aims to allow broad comparison of national efforts to address the cancer burden and to identify both gaps in knowledge and opportunities for policymakers. In addition, the report draws on insights from a series of expert interviews and extensive desk research conducted by The Economist Intelligence Unit.

The report's key findings are outlined as follows.

Despite emerging policy and institutional foundations for a cancer response, excess cancer mortality remains a concern for lower- and middle-income countries. All countries in this analysis have some form of cancer control plan, either as stand-alone documents or as part of a non-communicable disease (NCD) strategy. Although planning is broadly better in high-income countries, the Philippines, Malaysia and Thailand are notably above average. The ability of countries to deliver cancer care services is diverse: high-income countries have high standards of care and lower mortality, while upper-middle and lower-middle income countries are grappling with closing access gaps or setting up the infrastructure for a cancer response and are yet to see the benefits of reduced mortality. Policymaking processes should also promote multi-stakeholder collaboration and participation of patients' voices, an area in which Malaysia and the Philippines show progress.

Mechanisms to translate policy and planning into action appear to be lacking in many countries. Despite the emergence of more comprehensive cancer policies, few make provision for implementation, set goals or address resource needs. While upper-middle-income countries score highly in planning domains, they are yet to see the benefit of improved outcomes enjoyed by the high-income countries. Cancer planning should be regarded as an ongoing process and resources should be in place to ensure effective implementation, including monitoring and evaluation frameworks, strong leadership and adequate financial resourcing.

Albeit with varying quality, all countries have embarked on developing their own registries. Australia, Malaysia and South Korea offer the best examples of cancer registries in the region. Countries like Indonesia, the Philippines and Vietnam still face the task of increasing coverage and improving the quality of registry data. Limitations were broadly found regarding cancer research initiatives across middle-income countries where funding is limited. Better data and understanding of cancer landscapes will be essential for creating effective and bespoke cancer control strategies.

With a high prevalence of modifiable risk factors such as smoking, policy frameworks promoting healthier lifestyles should be prioritised. The high prevalence of smoking in the middle-income group poses a serious threat, especially in Indonesia, China and the Philippines. Although there has been some progress in tobacco regulation in India and the Philippines, countries across the board should look to Australia's example of comprehensive regulation. Alcohol consumption, physical activity and obesity should also be addressed. Health literacy around aspects of cancer prevention and treatment is a concern across the middle-income group and should be promoted

Despite some progress, middle-income countries should strengthen actions in prevention and early detection of cancer. Most countries have achieved significant rates of immunisation against hepatitis B among infants, but several are lacking human papillomavirus (HPV) vaccination programmes. Immunisation should be a priority in middle-income countries with a prevalence of liver and cervical cancer. High-income countries, and China, are leading in

the implementation of screening programmes for common types of cancer. With concerning numbers of cancers diagnosed at a late stage in developing Asia, a combination of screening and early diagnosis strategies should be put in place.

There are gaps in service availability in the middle-income group, particularly in rural or remote areas. Performance in service availability across the cancer continuum is reflective of economic development, with the lower-middle-income group performing significantly worse than the high-income group. A key concern among the former is underprovision of care in rural or peripheral areas. Boosting service availability will require investment in equipment, specialists and infrastructure. Among the middle-income group, China and Indonesia stand out for the development of evidence-based clinical guidelines for cancer, which can help to unify quality standards. Mainly high-income countries lead in incorporating principles of patient-centred care while middle-income Malaysia and the Philippines have successfully included patient participation in policymaking processes.

Middle-income countries must increase healthcare spending to meet UHC commitments and place greater emphasis on efficiency. Middle-income countries are still developing the necessary health infrastructure to fulfil promises of universal coverage and are lagging behind the standards of developed economies. They have opportunities to achieve more cost-effective coverage through primary care networks and through the use of technology. Indonesia and Malaysia show the strongest growth in healthcare spending, while China the biggest reduction in out-of-pocket expenditure.

Still, healthcare spending remains below international standards in Southeast Asia, and it is only the high-income countries that meet World Health Organisation (WHO) recommended spending levels for UHC. Mechanisms for prioritising and assessing cost-effectiveness are developing in most of the countries and merit prioritisation given the region's constrained resources and expanding needs.

Progress towards the implementation of UHC programmes across Southeast Asia deserves recognition, but there are still issues regarding accessibility and quality.

Implementation of UHC programmes in the region has delivered a number of benefits, such as increasing financial protection among poorer and previously uninsured populations. Challenges include achieving universal enrolment, reducing out-of-pocket expenditure and improving the efficiency and quality of health systems. Going forward, countries should respond to their evolving disease burdens by providing updated benefits packages, ensuring sustainability in financing, strengthening primary care networks, boosting infrastructure and service supply, and balancing private sector provision.

Introduction: A varied cancer landscape in Asia-Pacific

The Asia-Pacific region is home to 60% of the world's population and accounts for about 50% of total global cancer incidence. There were an estimated 8.8m new cancer cases and 5.5m cancer deaths in Asia in 2018, according to the International Agency for Research on Cancer (IARC). With many countries experiencing rapid economic growth, urbanisation and rapidly ageing populations, the cancer challenge is set to increase. By 2030, the population is projected to grow by 9%.¹ However cancer incidence is expected to increase by around 35% to 11.8m cases over the same period. While the age-standardised incidence of cancer in Asia is relatively low compared with Oceania, North America and Europe, mortality is comparatively high. Indeed, Eastern Asia has the second-highest mortality among the IARC's 21 subregions, driven in part by very high mortality in Mongolia (not a part of this study) and China (12th in the world).

Worryingly, an increase in mortality of nearly 40% in Asia-Pacific is expected by 2030.²

This study focuses on ten diverse Asia-Pacific countries. The group includes India and China, both with a population over 1.3bn, as well as the smaller-populations of Malaysia and Australia. Annual income per head ranges from US\$53,230 in Australia to US\$2,020 in India. Three income groups are represented, with high-income Australia, Japan and South Korea; upper-middle-income China, Thailand and Malaysia; and lower-middle-income India, Indonesia, the Philippines and Vietnam.

As of 2017 cancer was the leading cause of death in Japan, Thailand and South Korea, the second cause of death in Australia, China, Indonesia, Malaysia and Vietnam, and the third cause of death in the Philippines (see Table 1).

Table 1: Estimates of proportion and rank of cancer deaths, 2010 and 2017

Country	2010		2017	
	Cancer as percentage of all deaths	Rank as cause of death	Cancer as percentage of all deaths	Rank as cause of death
Australia	29.8%	2nd	29.4%	2nd
China	23.1%	2nd	24.9%	2nd
India	7.6%	5th	9.4%	4th
Indonesia	10.9%	2nd	12.1%	2nd
Japan	31.8%	1st	30.2%	1st
Malaysia	15.7%	2nd	16.4%	2nd
Philippines	11.0%	3rd	11.9%	3rd
South Korea	32.0%	1st	30.9%	1st
Thailand	22.0%	1st	22.0%	1st
Vietnam	17.9%	2nd	19.9%	2nd
East Asia & Pacific	21.5%	2nd	22.9%	2nd
South Asia	8.0%	6th	9.8%	3rd

Note: Cancer figures are approximations and include all kinds of neoplasms. Source: IHME, Global Health Data Exchange (GHDx)

¹ UN, World Population Prospects 2019.

² Cancer incidence and mortality data from: J Ferlay *et al.*, Global Cancer Observatory: Cancer Today.

Notably, cancer climbed from the fifth to the fourth cause of death in India between 2010 and 2017 despite the relatively low proportion of all deaths caused relative to our other countries of study.

Diverse cancers call for diverse health policies

Countries in the high-income group have been industrialised for decades. Their populations are generally older and they have endured cancer burdens for longer—for example, cancer became the leading cause of death in Japan in 1981 well before other Asian countries in the region.³ This economic group also has the highest cancer incidence (age-standardised per 100,000 population) and a median age of around 40 years. With a longer history of addressing the cancer challenge, and more resources available, these countries have highly-developed healthcare systems and more advanced cancer programmes.

Countries in the upper-middle-income group have experienced rapid economic growth in the last two decades, with living standards of the population improving significantly within a generation. China and Thailand also have a median age approaching 40 years, while the Malaysian population remains relatively younger. In common with the high-income group, these countries are grappling with rapidly ageing populations.

In turn, the lower-middle-income countries—India, Indonesia, Vietnam and the Philippines—have relatively younger populations with a median age of around 30 years. These countries have also experienced rapid economic growth in the last two decades.

With a lower cancer incidence on average and fewer resources, they are beginning to build up the infrastructure for a cancer response. The prevalence of cancer types differs between these economic groups (see Table 2). In high-income countries there is a noticeable incidence of colorectal cancer, a lifestyle-related condition common in developed countries. This is also seen in the upper-middle-income countries and increasingly in the lower-middle-income Philippines. This trend demonstrates the way in which economic development and urbanisation gives rise to similar behaviours regardless of geographical location. In more developed regions “there is a reduction in infection-associated cancers, gradually,” notes André Ilbawi, technical officer for cancer control at the World Health Organisation, “but an increase in those associated with prosperity, inactivity or obesity.”

In lower-middle-income countries, incidence of infection-driven cancers such as cervical cancer (largely preventable with HPV immunisation) remains significant. Asia also has a disproportionate burden of liver, stomach and oesophageal cancers.⁴ Vietnam, Thailand, China and South Korea are among the top-ten countries in the world by incidence of liver cancer, associated with vaccine-preventable chronic hepatitis B infection.⁵ South Korea, Japan, China, and Vietnam are among the ten countries with the highest incidence of stomach cancer in the world. China is among the ten countries with the highest incidence of oesophageal cancer.⁶

³ T Matsuda and K Saika, “Cancer burden in Japan based on the latest cancer statistics: need for evidence-based cancer control programs”, *Annals of Cancer Epidemiology*, 2018.

⁴ M McDonald *et al.*, “The Burden of Cancer in Asia”, *Pfizer facts*, 2008.

⁵ F Bray *et al.*, “Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries”, *CA: a Cancer Journal for Clinicians*, 2018.

⁶ Based on age-standardised rates per 100,000 from J Ferlay *et al.*, *Global Cancer Observatory: Cancer Today*.

Table 2: Most common cancers (total incidence and mortality), 2018

Country	Incidence (total) 2018 both sexes			Mortality (total) 2018 both sexes		
	1	2	3	1	2	3
Australia	Breast	Prostate	Colorectum	Lung	Colorectum	Prostate
China	Lung	Colorectum	Stomach	Lung	Stomach	Liver
India	Breast	Lip, oral cavity	Cervix uteri	Breast	Lip, oral cavity	Lung
Indonesia	Breast	Cervix uteri	Lung	Lung	Breast	Cervix uteri
Japan	Colorectum	Lung	Stomach	Lung	Colorectum	Stomach
Malaysia	Breast	Colorectum	Lung	Lung	Colorectum	Breast
Philippines	Breast	Lung	Colorectum	Lung	Liver	Colorectum
South Korea	Thyroid	Colorectum	Stomach	Lung	Liver	Colorectum
Thailand	Lung	Liver	Breast	Liver	Lung	Colorectum
Vietnam	Liver	Lung	Stomach	Liver	Lung	Stomach
Asia	Lung	Colorectum	Breast	Lung	Stomach	Liver

Source: Cancer Today 2018.

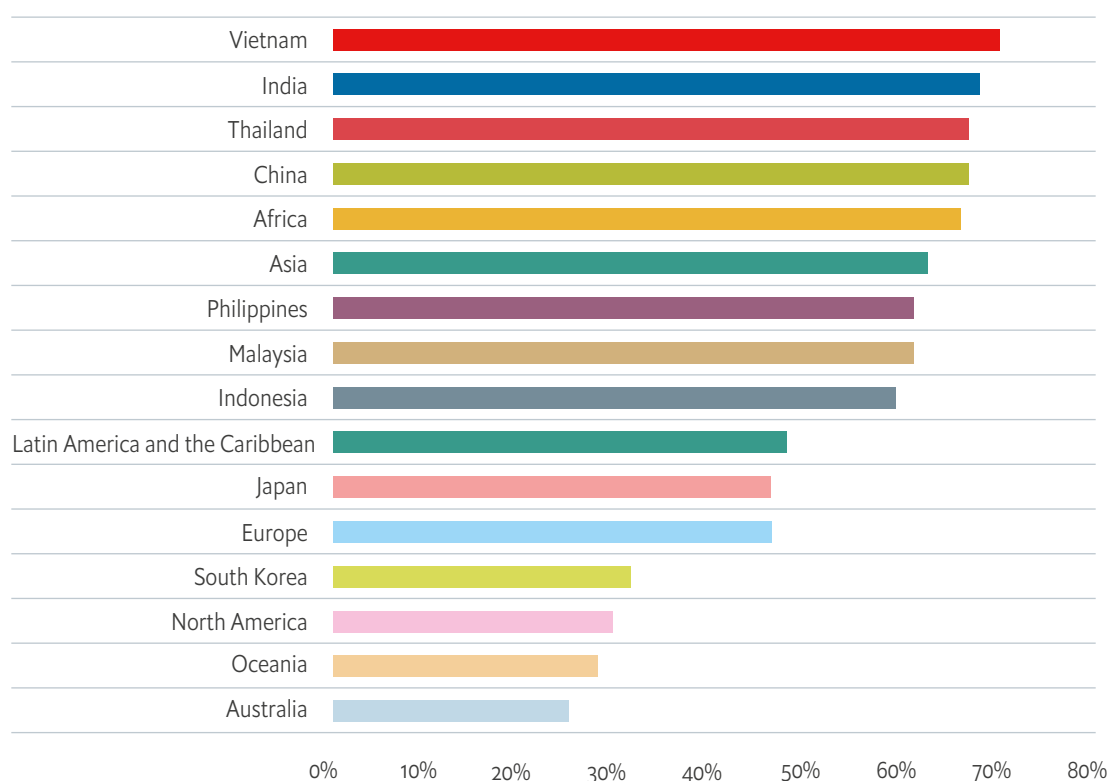
Different epidemiological profiles require different responses to cancer. As Dr Ilbawi points out, high-income countries are focusing on issues such as “prevention, value-based care in health system design, introduction of new technologies, co-ordination of services across levels of care or integration of survivors into the workforce.” In middle-income countries, the primary concerns are management of rising cancer costs, inadequate quality and capacity, fragmentation in care and centralisation of services in main urban centres.

Cancer management outcomes

The mortality to incidence ratio (M:I) is a broad descriptor of efficiency in cancer management. Lower scores are associated with better healthcare system performance. The M:I ratio for the whole of Asia is high in global terms, and is only below that of Africa. But there is disparity between high-income countries such as Australia, South Korea and Japan and middle-income countries in the group (see Chart 1). Poorer performance is recorded in lower-middle-income countries.

Chart 1

Cancer M:I ratio (crude, selected countries and regions), 2018



Sources: Cancer Today 2018, Economist Intelligence Unit calculations.

Another important metric of success in the fight against cancer is survival rate. The 5-year net survival rate for breast cancer ranges between 89.5 in Australia to 65 in Malaysia. For lung cancer, the survival rate ranges between 32.9 in Japan to 3.7 in India; for prostate cancer between 94.5 in Australia to 44.3 in India; and for colon cancer between 71.8 in South Korea and 38.9 in India.⁷

Measuring societal cancer impact

Beyond the effects on individuals, cancer mortality and morbidity have a great impact on communities and societies. In China, for example, the productivity lost as a result of premature mortality was estimated as equivalent to 0.21% of GDP in 2012.⁸ In South Korea, a study found the overall cost of cancer to be US\$17.3bn in 2009, including medical, non-medical, morbidity and mortality costs.⁹

⁷ C Allemani *et al.*, "Global surveillance of trends in cancer survival 2000–14 (CONCORD-3): analysis of individual records for 37 513 025 patients diagnosed with one of 18 cancers from 322 population-based registries in 71 countries", *Lancet*, 2018

⁸ Alison Pearce *et al.*, "Productivity losses due to premature mortality from cancer in Brazil, Russia, India, China, and South Africa (BRICS): A population-based comparison", *Cancer Epidemiology*, 2018.

⁹ SY Kim *et al.*, "The Economic Burden of Cancer in Korea in 2009", *Asian Pacific Journal of Cancer Prevention*, 2015.

Another study for this country found that the economic cost of cancer grew by an annual average of 8.9% between 2000 and 2010.¹⁰ In Australia, a 2015 study estimated productivity lost due to cancer to equal AUS\$1.7bn,¹¹ with billions more in healthcare costs.¹² An analysis on the burden of breast cancer found a cost of US\$213bn in China, US\$77bn in Japan and US\$12bn in South Korea between 2010 and 2030, based on foregone GDP.¹³ Meanwhile in Thailand, productivity loss for liver cancer-associated mortality alone accounted for THB11,836m for men and THB706m for women.¹⁴

Reflecting the significance of smoking as a risk factor in the region, multiple studies address this issue separately. In Indonesia the cost of cancers attributed to smoking was over US\$1.3bn in 2013.¹⁵ A similar exercise was conducted in South Korea finding US\$595m in direct costs, and US\$2.2bn in indirect costs in 2014.¹⁶ In Thailand, smoking was estimated to cost 0.78% of national GDP overall (including all smoking-related illnesses) in 2009, or 18.2% of total health expenditure.¹⁷

Beyond the aggregated estimations of economic cost, some studies have followed patients' experience with cancer. One important examination is the ASEAN Costs in Oncology (ACTION) study, a longitudinal study of 9,513, patients in Southeast Asia (Cambodia,

Indonesia, Laos, Malaysia, Myanmar, the Philippines, Thailand, and Vietnam) through the first year after their diagnosis, conducted during 2012-2014. The study found that after one year 29% of the patients had died while 48% experienced financial catastrophe. The study also found significant rates of treatment abandonment (23%).¹⁸ Results varied across countries, however. Mortality after one year was much lower in Malaysia than in Myanmar (12% vs 45%), while the risk of financial catastrophe greatly differed between Thailand and Vietnam (24% vs 68%).¹⁹ The ACTION study highlighted the urgency of increasing financial protection for the population facing cancer, especially among the poor and the uninsured, as many individuals reported the need to take personal loans, for instance, or similar measures.

Cancer presents a formidable challenge to healthcare systems across Asia-Pacific. With immense diversity, each country requires a specific response. The following chapters of this report will examine how countries in the Asia-Pacific region are responding to the challenges of cancer care from the perspective of three essential pillars: policy and planning, care delivery, and healthcare systems and governance. Further, we take a closer look into the provision of cancer care as part of UHC in Indonesia, Malaysia, the Philippines, Thailand and Vietnam.

¹⁰ KS Lee *et al.*, "Economic Burden of Cancer in Korea during 2000-2010", *Cancer Research and Treatment*, 2015.

¹¹ N Bates *et al.*, "Labour force participation and the cost of lost productivity due to cancer in Australia", *BMC Public Health*, 2018.

¹² Cancer Council, "Facts and figures", 2019.

¹³ DE Bloom *et al.*, "The economic burden of chronic diseases: Estimates and projections for China, Japan, and South Korea", Hohenheim Discussion Papers in Business, *Economics and Social Sciences*, 2017.

¹⁴ Clertpitakpong *et al.*, "Cost of Productivity Loss Due to Premature Mortality Related to Alcohol Drinking in Thailand", *Journal of Health Science*, 2009.

¹⁵ SA Kristina *et al.*, "Burden of Cancers Related to Smoking among the Indonesian Population: Premature Mortality Costs and Years of Potential Life Lost", *Asian Pacific Journal of Cancer Prevention*, 2015.

¹⁶ TX T Nguyen *et al.*, "The economic burden of cancers attributable to smoking in Korea, 2014", *Tobacco Induced Diseases*, 2019.

¹⁷ K Bundhamcharoen *et al.*, "Economic burden from smoking-related diseases in Thailand", *Tobacco Control*, 2016.

¹⁸ The George Institute for Global Health, "ASEAN Costs In Oncology Cancer and its economic impact on households in the ASEAN countries (ACTION) study", 2018.

¹⁹ N Bhoo-Pathy *et al.*, "Policy and priorities for national cancer control planning in low- and middle-income countries: Lessons from the Association of Southeast Asian Nations (ASEAN) Costs in Oncology prospective cohort study", *European Journal of Cancer*, 2017.

Chapter 1. The Index of Cancer Preparedness—Asia-Pacific

Measuring cancer preparedness

This study follows The Economist Intelligence Unit's early 2019 publication ***Cancer preparedness around the world: National readiness for a global epidemic***, which evaluated 28 countries around the world. This new edition examines ten countries in the Asia-Pacific region: Australia, China, India, Indonesia, Japan, Malaysia, the Philippines, Thailand, South Korea and Vietnam.

The Index of Cancer Preparedness (ICP) measures how ready healthcare systems are for the challenge of cancer and seeks to answer this question: how well prepared are countries to achieve major reductions in premature deaths from cancer, increase cancer survival rates, and improve the quality of life for cancer patients and survivors?

The ICP was developed following a literature review and an expert panel meeting that guided the selection of suitable indicators of cancer preparedness. The index explores the issue of cancer preparedness through three broad domains:

- 1. Policy and planning: focusing on levers that are mostly in the hands of policymakers.**
- 2. Care delivery: looking at capacity to deliver cancer-specific services within health systems themselves.**
- 3. Health systems and governance: acknowledging that cancer cannot be defeated by cancer-focused activities alone.**

The three domains comprise 13 sub-domains and 45 indicators. These range from the existence of policies to encourage physical activity to the extent of palliative care provision in the public health system. Other indicators look at issues as various as the size of the healthcare workforce and the prevalence of corruption.

Indicators for each country were scored out of 100 following standard guidelines. Indicator scores were then aggregated using weighted averages into sub-domain scores, which were finally computed into an overall score. Scoring and weighting across indicators were defined by the expert panel. The ICP measurements rely on evidence collected by The Economist Intelligence Unit and from data obtained from respected international databases.

The overall results are shown in Table 4.

Table 4: ICP—Asia-Pacific results

Overall Score		1 Policy & Planning		1 Care Delivery		3 Health System & Governance	
1	Australia 92.4	1	Australia 98.0	1	Australia 91.2	1	Australia 83.4
2	South Korea 83.4	2	Malaysia 92.3	2	Malaysia 84.2	2	South Korea 78.5
3	Malaysia 80.3	3	South Korea 88.7	3	South Korea 80.6	3	Japan 63.9
4	Japan 78.1	4	Thailand 86.4	4	Japan 78.0	4	China 58.2
5	China 69.7	5	Japan 85.3	5	China 65.3	Average	51.5
Average	65.5	6	China 79.8	Average	62.0	5	Malaysia 48.6
6	Thailand 65.2	Average	78.6	6	Thailand 54.5	6	Thailand 43.9
7	Indonesia 57.4	7	India 69.6	7	Indonesia 53.0	7	Indonesia 42.1
8	India 51.6	8	Indonesia 69.4	8	India 41.5	8	India 36.0
9	Vietnam 44.5	9	Vietnam 61.4	9	Vietnam 35.7	9	Philippines 32.4
10	Philippines 42.6	10	Philippines 54.9	10	Philippines 35.5	10	Vietnam 28.4

Normalised scores 0-100, where 100 = most prepared

High (85.1 - 100)

Moderate (70.1 - 85)

Low (50.1 - 70)

Very low (0 - 50)

The global ICP study found a strong correlation between cancer control outcomes (measured by the M:I ratio; see Chart 1) and the overall ICP score. This showed that, in broad terms, better performance in the ICP is consistent with countries achieving better cancer management outcomes. In Asia-Pacific, this association holds. Further correlation analysis shows some interesting patterns:

- There is a **strong positive association between income levels and performance in overall cancer preparedness**, broadly with high-income countries in the lead, followed by upper-middle-income and lower-middle-income countries next.
- The above association is stronger in the “health systems and governance” domain, followed by the “service

delivery” domain and **less strong in “policy and planning”**. This shows that infrastructure and service capacity aspects, stronger in markets such as Australia, South Korea and Japan, are harder to leapfrog, while in policy and planning there is a higher concentration of middle-income leaders (above the average), such as Malaysia, Thailand and China.

- While healthcare spending (as a percentage of GDP) is positively associated with performance in the index, **there is a stronger association with political will**, an indicator that includes not only funding but also institutional aspects such as health technology assessment (HTA) agencies and commitment to UHC.

- An influential indicator (strong correlation) for **overall performance in the index is “screening and early detection”**, highlighting the importance of improving the early management of the disease in the region. Other influential indicators are “cancer registries” and “infrastructure”.

To interpret the value of the ICP requires acknowledgment of the limitations in modelling a complex reality.

- First, we include only indicators that draw on broadly comparable data available across all countries. In aiming for global comparability, some of the country specificity and context may be lost.
- For some indicators we rely on the latest available data from international sources. There may be lags in this information as global studies take several years to be completed. In addition, some of the information may rely on a single data point, such as self-reporting from officials to the WHO.
- The need for consistency in measuring results across countries can sometimes throw up anomalous scores. Countries may have different coverage or strategies for various interventions depending on their priorities and epidemiological profiles. For example, a country may address hepatitis B vaccination differently based on prevalence. But for the purpose of regional comparability we take only one view, and that is the proportion of one-year-olds who complete a full vaccination schedule.
- This is mainly a study of inputs (such as policy, institutions, resources, infrastructure and governance). Hence, results can be contradictory with observed outcomes. For example, a country with recent policy developments may score well even where healthcare outcomes are suboptimal. A self-assessment of the quality of implementation of policies is a crucial task for country leaders to ensure that these translate into positive outcomes.
- Measuring policies has inherent difficulties. Policies may not last long or may be insufficiently implemented to have an impact. Why measure policies? Because policy is the first step in recognising a problem and working towards a solution.
- Lack of data across every country makes it possible for the ICP to measure implementation to only a limited degree. Following through on policy statements is far from guaranteed, and the quality of implementation can vary greatly. For example, the existence of a national cervical cancer screening programme in the public service is not a confirmation of optimal coverage.
- This study presents only a relative classification of a small group of countries, so interpretation of rankings or extrapolation to the entire region should be done with caution.

The following chapters distil insights about cancer preparedness in the domains of the ICP: policy and planning, care delivery, and health systems and governance.

Chapter 2. Policy and planning

Key takeaways

- All countries undertake some degree of planning for cancer control, either through dedicated strategies or as part of a non-communicable disease (NCD) strategy. Although the high-income countries generally had better results, the Philippines, Malaysia and Thailand were also above average. Elaboration of cancer plans should be perceived as an ongoing endeavour and they should clarify which structures and resources are needed for implementation.
- Australia, Malaysia and South Korea offer the best examples of cancer registries in the region and, with variations in quality, all countries have embarked on developing their own. Indonesia, the Philippines and Vietnam still face the task of improving the coverage of their data. Good data will be essential for designing precise cancer responses. Funding limitations for cancer research are noted in the middle-income group.
- Effective policies on tobacco control and healthy lifestyle promotion are a priority throughout the region. There is a high prevalence of smoking in the middle-income group, especially in Indonesia, China and the Philippines. Countries across the board should look to Australia's example of comprehensive regulation.

National cancer control plans

The ICP showed that all ten countries studied had some form of cancer plan. Australia, Japan and the Philippines have the most comprehensive national cancer control plans. This means their plans meet attributes such as: being a stand-alone document, having a comprehensive scope (with targets and subdomains, addressing the full continuum in cancer care, supportive and palliative care and patient-centred care), including an implementation framework (with details of leadership, timeline and financial resources), and defining a framework for governance, monitoring and evaluation.

Among the leaders, the Philippines stands out as the only lower-middle-income country with a comprehensive plan. The country's planning for cancer has been defined in the recent National Integrated Cancer Control Programme instituted through the National Integrated Cancer Control Act (NICCA), approved in February 2019. The programme serves as an implementation framework for cancer policy and provides for a National Cancer Prevention and Control Action Plan for 2020-2025. Although implementation of the new programme is on hold, the Philippines shows evolving commitment to cancer planning—a previous action plan was in place for 2015-2020—and is now navigating the challenges of providing cancer care and UHC (see Box 1).²⁰

²⁰ Department of Health, "Philippine Cancer Control Programme".

Malaysia is another ASEAN country with a high-quality cancer plan. The National Strategic Plan for Cancer Control Programme (NSPCCP) 2016-2020 replaced the 2008-2015 National Cancer Control Blueprint (NCCB). The new document identifies nine areas of focus, including diagnosis, palliative care and rehabilitation. Implementation of the strategy is the responsibility of the Non-Communicable Diseases directorate in the Ministry of Health. The plan would have a perfect score were it not for the lack of clarity regarding financial resources. As the implementation period comes to an end, work on the next iteration is scheduled to begin this year. Thailand's National Cancer Control Plan (2018-2022) also deserves mention, although it lacks clarity on financial resources and provision of patient-centred care.

India and Vietnam's plans are still nascent. Vietnam's 2008 cancer plan accounts for increased awareness, healthcare capacity, treatment and palliative care, but only as part of an overall National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular diseases and Stroke (NPCDCS), rather than a stand-alone plan. Similarly, while India has previously introduced dedicated cancer control plans (2002 and 2008), these have now been superseded by the national NCD strategy 2015-2025.

It is evident that further commitment to effective implementation of cancer plans is needed across the region. According to the ICP, only three of the countries examined

(Australia, Japan and the Philippines) feature all three essential foundations of an implementation framework within their cancer plans. Namely, they include definitions of leadership, a timeline, and specify financial resources for implementation of cancer control activities. Lacking any of these elements would make it difficult to achieve the necessary coordination and strength to execute these complex initiatives. ASEAN countries will need to focus on strengthening the implementation of their cancer plans if they are to achieve the goals set out in the 2012 Jakarta Call to Action on Cancer Control.²¹

As the cancer challenge grows in Asia's middle-income countries, cancer plans will require constant updates and refinements if they are to provide adequate guidance for cancer programmes. For Eduardo Banzon, principal health specialist at the Asian Development Bank, some countries may struggle to commit to cancer plans due to the competition between cancer and other urgent healthcare needs. "If there are not enough resources to cover all needed health services then the prioritisation process is difficult." In Indonesia, "cardiovascular diseases remain the leading concern," notes Hasbullah Thabrany, chair of the Centre for Health Economics and Policy Studies at Universitas Indonesia.

"This creates limitations in funding certain cancer initiatives."

²¹ M Woodward, "A consensus plan for action to improve access to cancer care in the association of Southeast Asian Nations (ASEAN) region", Asian Pacific Journal of Cancer Prevention, 2014.

Table 5: ICP assessment of national cancer control plans

Country/indicator	Existence of NCCP	Comprehensiveness	Implementation framework	Monitoring and evaluation
	Score 0-2	Score 0-3	Score 0-3	Score 0-2
Australia	2	3	3	2
China	2	1	2	0
India	1	0	0	0
Indonesia	2	2	1	1
Japan	2	3	3	2
Malaysia	2	3	2	2
Philippines	2	3	3	2
South Korea	2	2	2	2
Thailand	2	2	2	2
Vietnam	1	0	0	0

Note: Higher scores mean better performance.

Source: ICP—Asia-Pacific.

Population-based cancer registries

The top-rated registries in the ICP have national coverage, link to other health information systems and regularly collect and update high-quality data (including incidence, patient demographics, tumour characteristics, stage of disease, treatment and outcomes data). Australia, Malaysia and South Korea have the top-rated cancer registries in the ICP, followed by China and Thailand.

The Malaysian National Cancer Registry (MNCR), a high-quality Population-Based Cancer Registry (PBCR),²² was established nationwide in 2007 and collates data from registries in 13 states and two federal

territories. It has published two five-year reports, one covering 2007-2011 and another covering 2012-2016.²³

Recent progress in this area has been seen in Indonesia. In 2007 a national cancer registry was created in the Jakarta Province, initially covering a hospital-based remit but then expanding to attain population-based coverage.²⁴ As the registry is still under development, Indonesia is ranked at the bottom for this indicator. Lestari Moerdijat, vice-chair of Indonesia's People's Consultative Assembly, considers addressing cancer data a priority. "The government needs long-term planning, with political will, but the most important thing is having national cancer data."

²² American Cancer Society, "The Cancer Atlas: Cancer Surveillance", 2019.

²³ Ministry of Health, "Malaysia National Cancer Registry Report 2012-2016", 2019.

²⁴ M Wahidin *et al.*, "Population-Based Cancer Registration in Indonesia", *Asian Pacific Journal of Cancer Prevention*, 2012.

The Philippines and Vietnam have below-average scores with only regional rather than national-level registries that are lacking in quality data. Further development is expected in the Philippines along with the 2019 cancer legislation. Corazon Ngelangel, clinical director at the Asian Cancer Institute, Asian Hospital & Medical Centre, notes that the new cancer law provides for the development of cancer registries as “the plan for population-based registry is to expand coverage to other regions of the country, such as the south and the north; hospital-based registries will complement the population-based registry.”

The urgency of developing complete cancer registries as a prerequisite for any meaningful and evidence-based long-term planning for cancer cannot be overemphasised.

Cancer research

National capacity in cancer research is measured in the ICP by the availability of field epidemiology training programmes and a national cancer research policy or programme. All countries meet these two criteria except for the Philippines where no cancer research policy exists. This may also change with the passing of the NICCA which mandates the creation of a Philippine Cancer Centre set to become the country’s leading treatment, training and research institution.²⁵

In terms of developing cancer research programmes, advanced economies such as Australia, Japan and South Korea offer a source of best practice. Japan’s long-term approach to research through the establishment of a ten-year Cancer Research Strategy in 2014 is a good example. This comprehensive programme covers areas such as the nature of cancer, development of new drugs for unmet medical needs, development of patient-

centred medical technology, rare cancers and development of cancer prevention and early detection methods.²⁶ In middle-income countries, there are clear limitations for this component. “The main problem is that funding for research is very limited,” notes Dr Thabrany.

Research programmes allow countries to tackle their cancer challenges more effectively. “Where we’re lacking is really understanding what challenges the community and people face in terms of cancer care or the diagnosis of cancer,” notes Saunthari Somasundaram, president and medical adviser of the Malaysian National Cancer Society. “Why are we not moving forward in downgrading cancer? Without understanding the full landscape, it’s difficult to move forward and come up with innovative and successful strategies.”

Tobacco control and healthy lifestyle promotion policies

Prevalence of smoking is especially high in Indonesia at nearly 40% among those aged 15 and older, one of the highest smoking rates in the world. This is mainly a problem among males, with a huge difference between male and female rates (76% vs around 3%). All other countries in our study also have smoking rates above 20%, with the exception of Australia and India.

Australia is the leader in tobacco control measures among the ten countries and should be observed as a source of best practice. Based on the ICP, which compiled WHO data, its tobacco programme covers: an action plan to reduce the burden of smoking; high compliance with smoke-free environments legislation; warning labels for tobacco packaging; bans on advertising; and attempts to reduce affordability of tobacco. Australia

²⁵ Congress of the Philippines, “Republic Act No. 11215 - An act institutionalizing a national integrated cancer control program and appropriating funds therefor”, 2019.

²⁶ Japanese Government, “10-year Cancer Research Strategy”, 2014.

was the first country in the world to introduce mandatory plain packaging for tobacco in 2012,²⁷ and other stringent regulations include progressive increases in tobacco taxes, labelling with large, graphic health warnings and a ban on advertising, all of which have been implemented along with wide-reaching education programmes. Targeted tobacco campaigns, and quitting-support programmes and therapies for the population were also rolled out.²⁸ Furthermore, state regulation, such as in New South Wales limits smoking in public spaces.²⁹ After implementation of these multiple efforts, the Department of Health has seen a reduction in the smoking among adults from 22.1% in 2001 to 14.5% in 2014-15.³⁰

India and the Philippines follow Australia in terms of the strength of tobacco control. Recent developments in these countries include the introduction of graphic health warnings on tobacco packaging in 2016.³¹

Vietnam and Indonesia have the lowest scores. This presents a worrying scenario for countries with significant smoking prevalence, especially Indonesia.

Low physical activity and, increasingly, obesity, are issues across both high-income and middle-income countries (see Chart 2). Obesity among children is higher than for adults in both China (11.7% vs 6.6%) and Thailand (11.3% vs 10.8%), suggesting future health effects for generations. Meanwhile, alcohol consumption (measured as litres consumed among those aged 15 and older) is more prevalent in the high-income group, with Australia and South Korea leading followed by Vietnam, Thailand and Japan. Policies to promote healthy lifestyles, such as those addressing unhealthy diets, physical activity and alcohol use, were found across all countries except the Philippines.

²⁷ BBC World Service, "How Australia is stubbing out smoking", 2017.

²⁸ Australian Government, Department of Health, "Tobacco control—key facts and figures", 2017.

²⁹ NSW Government, "Smoke-free laws", 2019.

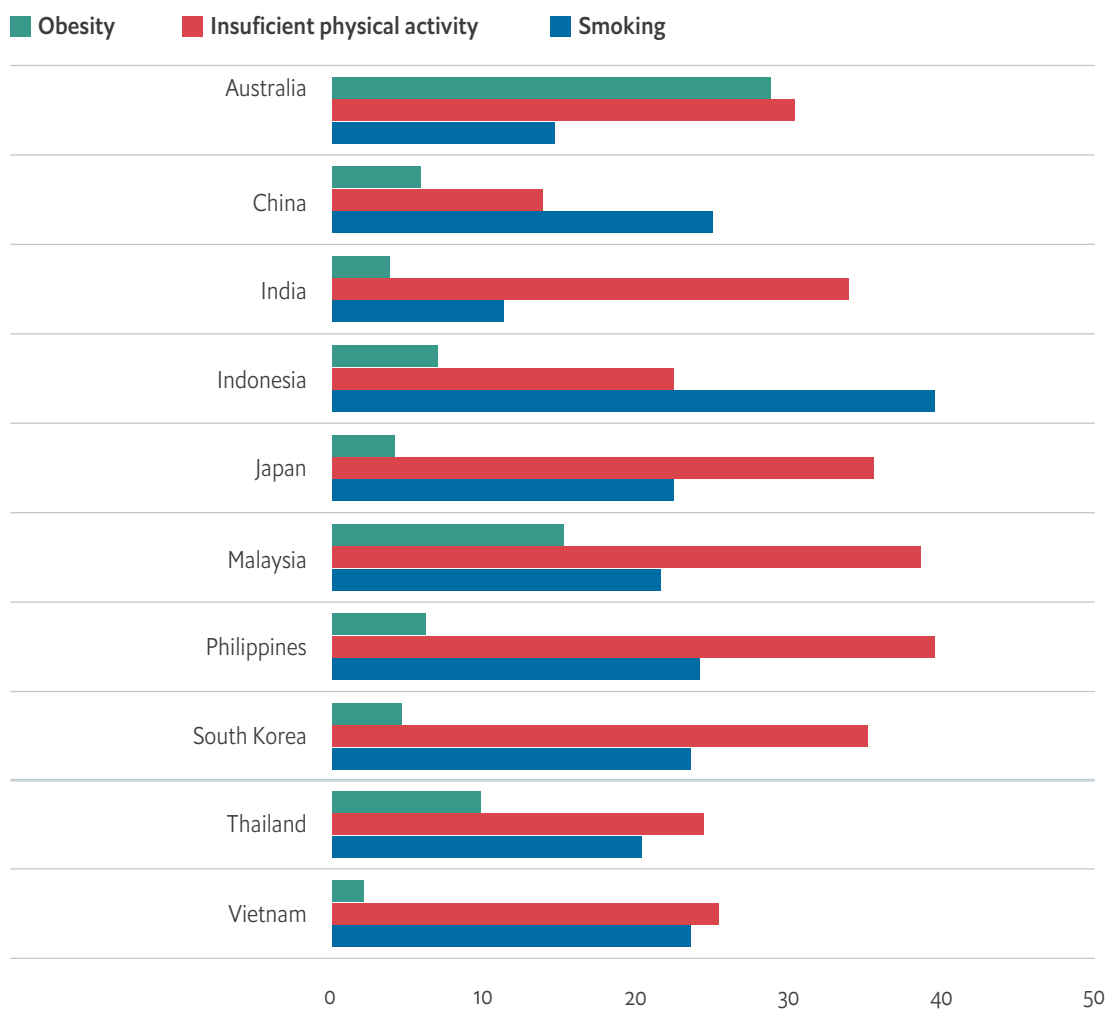
³⁰ Australian Government, Department of Health, "Tobacco control—key facts and figures", 2017.

³¹ World Health Organisation, "Tobacco Free Initiative (TFI)", 2020.



Chart 2

Prevalence of smoking, insufficient physical activity and obesity as a percentage of the adult population, 2016



Source: WHO, World Health Statistics and Global Health Observatory.
Smoking: <http://apps.who.int/gho/data/node.sdg.3-a-data?lang=en>
Physical activity: https://www.who.int/gho/ncd/risk_factors/physical_activity/en/
Obesity: <http://apps.who.int/gho/data/view.main.BMI30Cv>

Box 1: Policy development driving universal health coverage in the Philippines

A key milestone in the path towards universal health coverage (UHC) in the Philippines was the enactment of the National Health Insurance Act of 1995. This laid the foundations for the establishment of the Philippine Health Insurance Corporation (PhilHealth) and implementation of the national health insurance programme. This scheme increased the share of insured population from about 50% in 1995 to 90% by 2017.³² These efforts were boosted in February 2019 by the Republic Act No. 11223.³³ Further regulations introduced in October 2019 supplemented this landmark UHC act.³⁴

Under the UHC legislation all Filipino citizens are entitled to automatic enrolment in the National Health Insurance Programme (NHIP).³⁵ The system gives citizens access to preventive, promotive, curative, rehabilitative and palliative care through participation in one of two schemes: as either direct contributors who pay premiums from payroll or as indirect contributors who are subsidised.

The benefits package available through PhilHealth has been expanded to include free consultations, laboratory tests and other diagnostic services. All Filipinos are guaranteed zero co-payments for basic ward accommodations and will pay a fixed co-payment for non-basic admissions in public hospitals. Funding is proposed

through “sin tax” collections (on tobacco and alcohol) and from income generated by the Philippine Amusement and Gaming Corporation (PAGCOR) and the Philippine Charity Sweepstakes Office (PCSO). In the new system there will be pooling of resources for both population-based and individual-based health services, with PhilHealth acting as the “national purchaser” of health goods and services.³⁶

Other points of the new legislation address reforms to the healthcare system, including delegation of responsibilities to local government units (LGUs), provisions for the development of human resources in the health sector, development of infrastructure, establishment of a health technology assessment (HTA) agency, instituting monitoring and evaluation requirements and greater collaboration with the private sector.³⁷

Despite these high-level policies, achieving full population coverage remains a work in progress. A recent examination by The Economist Intelligence Unit conducted just prior to the implementation of the UHC act found strengths in existing national insurance coverage (98% of the population in 2018³⁸) and in growing national healthcare spending. However, the study finds that the magnitude of healthcare financing overall is still limited (at 1.5% of GDP). Furthermore,

³² K Obermann *et al.*, “The role of national health insurance for achieving UHC in the Philippines: a mixed methods analysis”, *Global Health Action*, 2018.

³³ Congress of the Philippines, “Republic Act No. 11223 - An Act Instituting Universal Health Care for All Filipinos, Prescribing Reforms in the Health Care System, and Appropriating Funds Therefor”, 2019.

³⁴ “Implementing Rules and Regulations of the Universal Health Care Act (Republic Act No. 11223)”, 2019.

³⁵ UICC, “Cancer and Universal Health Coverage in the Philippines”, 2019.

³⁶ Rappler, “Explainer: What Filipinos can expect from the Universal Health Care Law”, 2019.

³⁷ National Economic and Development Authority, “Explainer: Universal Health Care Law and what it means to PH development”.

³⁸ *Ibid.*

PhilHealth was found to provide shallow coverage. The WHO Index of Average Coverage of Essential Health Services awards it 60 out of a possible 100. Out-of-pocket spending as a proportion of health expenditure is also persistently high at 55%. Meanwhile, high socio-economic and urban-rural disparities make access more difficult for those in need. There is also below-optimal surgical capacity and a lack of advanced medical equipment.³⁹

Cancer coverage

Cancer coverage has been supported through PhilHealth's "Z Benefits" package since 2011, a scheme designed to provide protection for those afflicted by high-cost conditions. It covers acute lymphocytic leukaemia (children), breast, prostate, cervical, colon and rectal cancers and includes services across diagnosis, hospitalisation and treatment.⁴⁰ Further steps were taken in February 2019 with the enactment of the National Integrated Cancer Control Act (NICCA),⁴¹ with implementing rules signed in August 2019.⁴² This landmark legislation provides for the establishment of a National Integrated Cancer Control Programme to guide cancer control activities in the country. It further provides for the development of a National Cancer Prevention and Control Action Plan 2020-2025.

The NICCA aims to boost cancer control efforts, improve survivorship and reduce the burden of the disease. The legislation is meant to confer continuity to cancer efforts throughout the country.

Key features include:

- A mandate for the creation of the Philippine Cancer Centre to lead cancer research, treatment, training and registration.
- Provision for the creation of a Cancer Assistance Fund to improve access to care and the National Integrated Cancer Control Council, a policymaking and co-ordinating body for cancer control.
- The law also provides for the expansion of services across the cancer continuum under PhilHealth.
- The reclassification of cancer patients and survivors as persons with disabilities, entitling them to specific rights.

While this policy response is laudable, the development and implementation of the programme appears to be stalled following the planned appointment of council members for 2020. "Implementation will be phased along the years to manage resources," notes Dr Ngelangel. "It's still in progressive realisation." One accomplishment so far, however, has been

³⁹ The Economist Intelligence Unit, "Moving Universal Health Coverage from Ambition to Practice: Focus on the Philippines", 2019.

⁴⁰ PhilHealth, "Benefits", 2014.

⁴¹ Congress of the Philippines, "Republic Act No. 11215 - An act institutionalizing a national integrated cancer control program and appropriating funds therefor", 2019.

⁴² Department of Health, "Implementing rules for cancer act signed", 2019.

stakeholder involvement in the creation of this legislation, which included civil society, patient support organisations and medical societies, as noted by the Union for International Cancer Control (UICC).⁴³ The biggest concern for the success of the

cancer care provision is harmonisation between the NICCA and the UHC act—another vital work-in-progress—required to address the difficult matter of sustainably funding both acts.⁴⁴

⁴³ UICC, “Cancer and Universal Health Coverage in the Philippines”, 2019.

⁴⁴ Ibid.

Chapter 3. Care delivery

Key takeaways

- Most countries have achieved significant rates of immunisation against hepatitis B, but some are missing HPV vaccination programmes. High-income countries, and China, are leading the implementation of screening programmes for common types of cancer. Prevention and early diagnosis strategies should be prioritised given the persistence of infection-related cancers and late diagnoses in less developed countries.
- Service availability is reflective of economic development status, with important lags seen in the lower-middle-income group. A key concern is the underprovision of care in rural or peripheral areas. Boosting service availability will require investment in equipment, human resources and infrastructure.
- Among the middle-income group, China and Indonesia stand out for the development of evidence-based clinical guidelines for cancer which can help to unify quality standards. Generally, high-income countries lead in incorporating principles of patient-centred care.

Immunisation

Immunisation is measured by the presence of a national HPV vaccination programme and the coverage of hepatitis B vaccination among infants. The importance of these actions lies in the prevention of cervical cancer and liver cancer. Leaders in this category are Australia and Malaysia, with South Korea and Thailand tied in the highest scores. Overall

immunisation scores are the lowest in India and Vietnam.

According to 2017 data from WHO, national HPV vaccination programmes are present in seven study countries, but not in China, India or Vietnam. According to Feisul Idzwan Mustapha, deputy director of the Non-Communicable Disease Control Division at the Malaysian Ministry of Health, the programme is one of his country's greatest achievements. A national school-based programme was implemented in 2010 among 13-year-old girls, achieving coverage between 83 to 91% per year (with full vaccine course). Implementation included a detailed planning stage across different government levels and collaboration between health and education authorities.

A national campaign included media coverage and public activities to encourage greater awareness of—and engagement with—the programme. The availability of health personnel to answer questions was also ensured throughout the implementation process.⁴⁵ “A step further now will be a national programme for HPV DNA testing,” notes Dr Somasundaram. “It was initiated as a collaboration between a university, an NGO and the government.”

Not all programmes are able to achieve such high coverage. Dr Thabrany notes limited access in Indonesia. Vietnam still awaits the development of a HPV vaccination programme: Tran Thanh Huong, vice director at the National Cancer Hospital, notes that “HPV vaccination has been piloted between 2008 and 2010 among 6,000 teenagers in some provinces.” Vaccination was also included in the National Plan for Cervical Cancer Prevention and Control 2016-2025.

⁴³ UICC, “Cancer and Universal Health Coverage in the Philippines”, 2019.

⁴⁴ Ibid.

⁴⁵ N Muhamad *et al.*, “Achieving high uptake of human papillomavirus vaccination in Malaysia through school-based vaccination programme”, *BMC Public Health*, 2018.

As a sign of progress, in 2019 a technical collaboration between the United Nations Population Fund (UNFPA) and Merck Sharp & Dohme was announced to support the Ministry of Health in the development of an HPV immunisation programme.⁴⁶ In India, according to director of oncology at Apollo Hospitals and president-elect of the Union for International Cancer Control (UICC) Anil D'Cruz, implementation of a national HPV vaccination programme has faced challenges in that some sectors "believe there is not enough proof to bring in the vaccine". However, "some states have adopted the HPV vaccination".

Most countries achieve coverage above 80% in immunisation against hepatitis B among one-year-olds. China, Malaysia, South Korea, Thailand and Australia have rates very close to 100%. This is significant for countries like China, Thailand and South Korea, who have a high incidence of liver cancer. Japan is a notable outlier, having introduced hepatitis B in the national immunisation programme only in 2015, and yet to report national coverage rates. Vietnam and the Philippines are lagging behind with 75% and 65% coverage rates respectively, according to WHO data from 2018. Closing the gap should be a priority in Vietnam. Following the introduction of a national vaccination programme in 2002, a reduction in chronic hepatitis B virus infection prevalence was observed.⁴⁷ But after adverse events following immunisation were documented in 2013, vaccination coverage dropped.⁴⁸ Earning the trust of the public is essential to the success of these programmes. For Dr Ilbawi, "immunisation is not only about resources, but also about perceptions of the vaccine".

Screening and early detection

The countries leading in screening and early detection are some of the most economically advanced in the region. Australia, China, Japan and South Korea are tied in the top spot, followed by Malaysia. On the lower end of the scale are Indonesia, Vietnam and the Philippines.

All the countries reported having a national screening programme for cervical cancer to WHO, while all but one (the Philippines) have a national programme for breast cancer screening. Only six of the countries can provide mammography for early detection of breast cancer at the public primary healthcare level. The Philippines and Thailand offer clinical breast exams only while Indonesia and Vietnam lack both.

In only five countries (Australia, China, Japan, Malaysia and South Korea) is there availability of faecal occult blood tests or faecal immunological tests at the public primary healthcare level. Lastly, bowel cancer screening by exam or colonoscopy is available in six countries but lacking in India, Indonesia, the Philippines, Thailand and Vietnam, according to WHO data.

Late diagnosis is a frequently-cited key challenge in the region. A 2014 study noted that more than 70% of cancer cases in low- and middle-income countries in Asia were diagnosed at a late stage. Delayed diagnosis is an important contributing factor for poor survival prospects.⁴⁹ In Malaysia this has been reported to be at 60%,⁵⁰ while in Vietnam between 70% and 80%.⁵¹ Given these statistics, early detection actions should be a priority across the region.

⁴⁶ Viet Nam News, "UNFPA and MSD support roll-out of HPV vaccination in Viet Nam", 2019.

⁴⁷ TH Nguyen *et al.*, "A reduction in chronic hepatitis B virus infection prevalence among children in Vietnam demonstrates the importance of vaccination", *Vaccine*, 2014.

⁴⁸ X Li *et al.*, "Impact of Adverse Events Following Immunization in Viet Nam in 2013 on chronic hepatitis B infection", *Vaccine*, 2016.

⁴⁹ R Sankaranarayanan *et al.*, "Managing the changing burden of cancer in Asia", *BMC Medicine*, 2014.

⁵⁰ Ministry of Health Malaysia, "Early detection of common cancers and referral pathways: module for health care providers", 2017.

⁵¹ T Pham *et al.*, "Cancers in Vietnam—Burden and Control Efforts: A Narrative Scoping Review", *Cancer Control*, 2019.

In the opinion of Dr Feisul, in Malaysia there is still a need for wider population-based screening programmes as these are currently conducted on an “opportunistic” basis. Dr Huong also remarks on the limited coverage of screening programmes in Vietnam.

“Screening is not covered by health insurance,” she explains.

Another obstacle may be related to health literacy. In Malaysia, Dr Feisul notes that even when cancer is detected, patients “may seek alternative treatment instead of conventional treatment”. This is due to “misinformation around the disease, screening and treatment.” In his view this issue is intrinsically related to the national culture and cuts across socioeconomic classes. He calls for action on health education and promotion of health-seeking behaviours. Suleeporn Sangrajrang, deputy director at Thailand’s National Cancer Institute, voices a similar concern: “When some people hear about cancer, they think it’s deadly and treatment is toxic.”

According to Dr Thabrany, “lack of understanding means lack of compliance with medication, controls, diet or exercise”. In his view, primary care facilities could—and should—do more to encourage high-risk individuals to seek care services.

For Dr Ilbawi, early diagnosis is central to ensuring an immediate response to the growing cancer burden. Strategies should consider aspects such as “training primary care providers, referral mechanisms, pathology capacity, health literacy and health promotion to ensure early identification.” The WHO published a guide on early diagnosis in 2017, given its weighty implications for survival rates and system efficiency.⁵²

Service availability and workforce

The results in this category are generally reflective of the countries’ income level, with the three high-income countries (Japan, Australia and South Korea) at the top, followed by upper-middle-income Malaysia, Thailand and China, and with the lower-middle-income countries India, Vietnam, the Philippines and Indonesia ranked at the bottom.

While there is no standard for an appropriate level of staffing for cancer care provision, Japan is notable in its density of oncologists (Chart 3). According to Dr Thabrany the main issue in Indonesia is the lack of specialists. Importing skills from other countries could be an option but there are restrictions to their admission, he says. Dr Huong notes that service availability is a multi-dimensional challenge in Vietnam, which includes deficiencies in “availability of skilled pathologists, radiotherapy, modern techniques for molecular analysis and, especially, limitations in the rural areas”. Even in wealthier Malaysia the distribution of specialised workforce is an issue. “If you live in main cities there is no issue with accessibility. If you live far away you would need to travel to see an oncologist,” notes Dr Feisul. According to Dr Ngelangel, in the Philippines there is hope that implementation of the NICCA can drive the strengthening of the cancer network.

In all but two countries—China and Indonesia—radiotherapy is available in the public health system, according to 2014 data from WHO. Furthermore, The Economist Intelligence Unit constructed an indicator on the capacity of radiotherapy machines to meet patient demand. It was calculated by considering the actual number of radiotherapy machines available (linear

⁵² World Health Organisation, “Guide to cancer early diagnosis”, 2017.

Table 6: ICP assessment of selected preventive actions

Country/indicator	National HPV vaccination programme	National screening programme for cervical cancer	National screening programme for breast cancer	Availability of mammography or clinical breast exam (CBE)	Availability of faecal occult blood test or faecal immunological test	Availability of bowel cancer screening by exam or colonoscopy
	Score 0-1	Score 0-1	Score 0-1	Score 0-2	Score 0-1	Score 0-1
Australia	1	1	1	2	1	1
China	0	1	1	2	1	1
India	0	1	1	2	0	0
Indonesia	1	1	1	0	0	0
Japan	1	1	1	2	1	1
Malaysia	1	1	1	2	1	1
Philippines	1	1	0	1	0	0
South Korea	1	1	1	2	1	1
Thailand	1	1	1	1	0	0
Vietnam	0	1	1	0	0	0

Note: Higher scores mean better performance.

Sources: WHO, Global Health Observatory Data Repository, <http://apps.who.int/gho/data/>; WHO, Cancer Country Profiles, <https://www.who.int/cancer/country-profiles/en/>

accelerators and cobalt-60) in the public and private sectors, the incidence of cancer and the proportion of patients likely to need radiotherapy. Japan, Malaysia and South Korea are the leaders in this indicator, while Vietnam, the Philippines and Indonesia come in last. An estimated 37.8 machines are available in Indonesia with a population of over 250m (in 2013, when the data was produced), that is about 0.15 machines per million population. As a reference, European guidelines recommend one linear accelerator per 183,000 to 500,000 people.⁵³

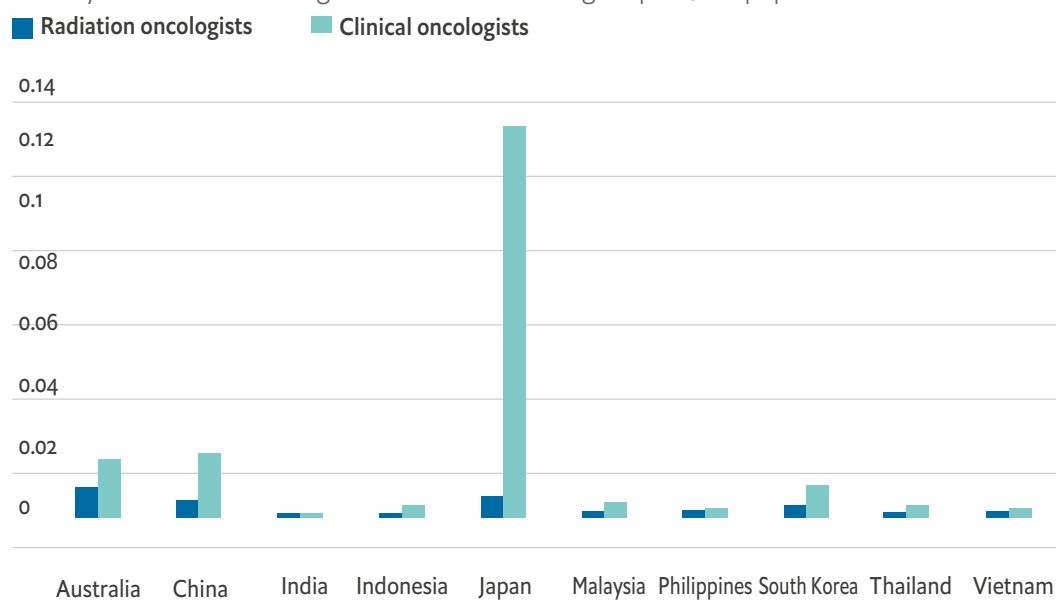
As a metric of actual availability of cancer medicines, the ICP examined the availability of six products from the WHO Essential Cancer Drug List in the public health sector (cisplatin, fluorouracil, docetaxel, imatinib, rituximab and trastuzumab), as reported by a pharmacist from a public hospital in the capital of each country.⁵⁴ Most countries reported at least some availability of all the drugs. Only in Malaysia and the Philippines was one of the medicines reported missing, despite all relevant drugs being listed on national formularies. Whether this represents a temporary term supply problem or longer-

⁵³ BJ Slotman *et al.*, "Overview of national guidelines for infrastructure and staffing of radiotherapy. ESTRO-QUARTS: work package 1, *Radiotherapy and Oncology*, 2005.

⁵⁴ Research by the Economist Intelligence Unit based on an interview with a local pharmacist of a public hospital in the capital of each country.

Chart 3

Density of radiation oncologists and clinical oncologists per 1,000 population



Sources: Radiation oncologists: WHO, Cancer country profiles, <https://www.who.int/cancer/country-profiles/en/>; Clinical oncologists: Economist Intelligence Unit research.

term unavailability of medicines is unclear. Additionally, the ICP examined the degree of reimbursement available for cancer medicines. Only in Thailand were cancer medicines found to be fully reimbursed. In the rest of the countries there is partial coverage, or exclusions for some types of cancer. In Australia for example, Medicare covers the costs of tests and treatments to a certain extent, with the difference paid by the patient.⁵⁵ In Japan, under the National Health Insurance patients are required to make co-payments ranging between 10% to 30% depending on age and income.⁵⁶ In China, under the public insurance programmes there are out-of-pocket payments for prescription drugs,⁵⁷ while in the Philippines the “Z Benefits” package of PhilHealth covers only certain types of cancer.⁵⁸ In Vietnam, there is only

partial reimbursement for cancer drugs. However, the implementation of UHC has made a big difference, as Dr Huong observes. “It has been a big support for cancer patients, including the poor patient.”

The last two indicators in this category refer to palliative care. According to 2017 WHO data, oral morphine is not generally available in the public health system in half of the studied countries: India, Indonesia, the Philippines, Thailand and Vietnam. Further, in only four countries was there availability of community- or home-based palliative care programmes in the public health system. In low- and middle-income settings or where cancer is commonly diagnosed at a late stage, the advancement of palliative care programmes strikes as a particularly high priority. “It is a relatively new

⁵⁵ Cancer Council, “Medical and pharmaceutical expenses”, 2018.

⁵⁶ Ministry of Health, Labour and Welfare, “Overview of Medical Service Regime in Japan”.

⁵⁷ The Commonwealth Fund, “The Chinese Health Care System”.

⁵⁸ PhilHealth, “Benefits”, 2014.

specialty in [Vietnam] and it exists in some large hospitals but it is very limited in rural areas," notes Dr Huong. "This needs to improve in the whole country." In the Philippines, Dr Ngelangel points to the existence of "some community-based initiatives, but development of this area is not there yet". Dr D'Cruz notes some achievements in India, such as liberalisation in access to opioids, the creation of palliative care facilities and the establishment of a training programme for specialists in this area. "This is helping in creating a set up for palliative care," he adds.

Clinical guidelines and patient centred care

In seven out of the ten countries there is presence of evidence-based national guidelines for the management of major NCDs through a primary care approach, while in three (Japan, the Philippines and South Korea) there is not, according to WHO data. The Economist Intelligence Unit also examined the availability of up-to-date (ie published in the previous 5 years) national evidence-based guidelines for the care of priority cancers (breast, lung, prostate, colorectal). In five of the countries these were available for all four kinds of cancer (Australia, China, Indonesia, Japan and South Korea). In Malaysia these are available for two, Vietnam has a locally-adapted treatment algorithm for two, and none were found in India, the Philippines or Thailand.

Indonesia stands out as the only middle-income country among the leaders. This process was led by the Ministry of Health and the National Cancer Control Committee (NCCC) and relied on the collaboration of experts from professional societies in the

different specialties. It resulted in the creation of eight guidelines on breast cancer, cervical cancer, lung cancer, colorectal cancer, nasopharyngeal cancer, brain tumours, prostate cancer and osteosarcoma. The benefits of using evidence to unify quality standards through guidelines should be noted.⁵⁹ According to Dr Ilbawi, guidelines "are relevant and appropriate, they improve access and efficiency".

The integration of patient-centred care principles is measured through three original indicators developed for this study. The first one is the availability of policies or recommendations for co-ordinated and integrated care with multidisciplinary teams (involving psychological support in cancer care, for example). These were present only in Australia, China, Japan, Malaysia and South Korea. Then, the ICP examined the existence of national clinical guidelines for long-term follow up and rehabilitation. Only in Japan do guidelines exist for long-term follow up and preventive care for cancer survivors, as well as programmes for rehabilitation and return to work. In Australia, Malaysia and South Korea one of the two are available. None were found in the rest of the countries.

Lastly, the ICP examined the role of patient organisations in the cancer agenda. China is the only study country in which national cancer patient support organisations were not identified, while only in Australia, Japan, Malaysia, the Philippines and South Korea was there proof of patient-organisation involvement in cancer policy development. Dr Ngelangel affirms this was the case in the Philippines. "The technical working group that worked on the cancer law had all stakeholders: medical societies, government agencies, and the cancer support groups were there too."

⁵⁹ IAEA, "Indonesia Plans to Increase Access to Cancer Control", 2018.

Dr Somasundaram believes progress is being made in Malaysia: “In the last couple of years, we [have seen] great acknowledgement by the government of other cancer stakeholders and the need to work with them.” While much work remains to be done in Indonesia, Ms

Moerdijat notes that “the communication between survivor organisations and the government is good and the government provides support to activities held by civil society”.

Box 2: Increasing service availability across Indonesia

Implementation of universal health coverage (UHC) in Indonesia has moved at a rapid pace in recent years. In 2014 the country launched its National Health Insurance Programme (Jaminan Kesehatan Nasional or JKN) which unified multiple public insurance schemes under the direction of the social security management agency for the health sector (BPJS Kesehatan).⁶⁰ This institution acts as a single payer, the biggest in the world.⁶¹ The initiative aimed to extend coverage to all Indonesians and especially to those not previously covered by any schemes, such as the poor, the self-employed and those in the informal sector. Coverage of the population increased rapidly from about 47% in 2013 to a reported 85% in 2019.⁶²

The system includes three different coverage schemes. There is one for the poor which is funded by general taxation, another for the employed (in either the public or the private sector) which is funded through a 5% contribution from monthly salaries (4% paid by the employer and 1% paid by the employee), and a third scheme for those in

the informal sector or the self-employed who pay premiums within a defined range. The JKN attempts to offer a comprehensive package ranging from infectious diseases such as influenza to expensive medical interventions such as open-heart surgery, dialysis and cancer therapies.⁶³

A recent review of UHC in the country found positive outcomes in its growing coverage and comprehensive benefits package, which undergoes annual reviews, although a health technology assessment (HTA) agency is still developing. Reductions in out-of-pocket expenditure and in catastrophic spending have also been observed.⁶⁴ A different examination notes improvements in coverage and service use, enhanced efficiencies in service delivery and the reduction of fees for services, while overall equity of access is improving.⁶⁵

⁶⁰ The Economist Intelligence Unit, “Universal healthcare coverage in Indonesia: One year on”, 2015.

⁶¹ R Agustina *et al.*, “Universal health coverage in Indonesia: concept, progress, and challenges”, *The Lancet*, 2018.

⁶² The Economist Intelligence Unit, “Moving Universal Health Coverage from Ambition to Practice: Focus on Indonesia”, 2019.

⁶³ The Economist Intelligence Unit, “Universal healthcare coverage in Indonesia: One year on”, 2015.

⁶⁴ The Economist Intelligence Unit, “Moving Universal Health Coverage from Ambition to Practice: Focus on Indonesia”, 2019.

⁶⁵ R Agustina *et al.*, “Universal health coverage in Indonesia: concept, progress, and challenges”, *The Lancet*, 2018.

This ambitious project has also faced challenges. In particular, the rapid growth of the system has raised questions about funding and overall sustainability. For example, the level of government spending on health as a percentage of GDP was 1.4% in 2016 while 5% is recommended to support universal health coverage. Infrastructure and workforce development also need to catch up with the growing demand for services. Significant disparities in service access between the rich and poor and urban and rural settings remain.⁶⁶

Enrolment is also proving difficult for those whose income is too high to be subsidised but too low to be able to contribute, known as the “missing-middle.”⁶⁷ Other issues include low coverage of children under the age of four⁶⁸ and persistently high maternal mortality rates.⁶⁹ While out-of-pocket payments are falling overall, a study found these still occur in 18% of cases.⁷⁰

The system promises treatment for cancer (such as chemotherapy and radiotherapy) but limited screening and early detection programmes have been noted (for cervical, breast, and prostate cancer). Overall, implementation of the national cancer control programme has faced challenges given the size of the territory and the need to address competing healthcare needs simultaneously, a study finds.⁷¹ Accessing cancer treatment can reportedly be cumbersome for patients.⁷² Furthermore, the BPJS has recently announced the delisting of a number of cancer drugs citing cost-effectiveness concerns. This has been met with criticism among sectors of the public.⁷³

⁶⁶ The Economist Intelligence Unit, “Moving Universal Health Coverage from Ambition to Practice: Focus on Indonesia”, 2019.

⁶⁷ Health Policy Plus, “Indonesia Makes Inroads toward Universal Health Coverage through National Health Insurance Program, Paving the Way for Others”, 2018.

⁶⁸ R Agustina et al., “Universal health coverage in Indonesia: concept, progress, and challenges”, *The Lancet*, 2018.

⁶⁹ Health Finance & Governance, “Study to Inform Planning, Implementation of UHC Initiatives in Indonesia”, 2015.

⁷⁰ Federal Ministry for Economic Cooperation and Development, “Indonesia on the way to universal health coverage: a first year review”, 2015.

⁷¹ M Neumann et al., “Responding to the call for “Treatment for All”: Examples from Indonesia, Mexico and Uganda”, *Cancer Control*, 2019.

⁷² Eleven Media Group, “Cancer patients in Indonesia often late to seek treatment”, 2019.

⁷³ The Jakarta Post, “Going against popular opinion, committee pushes for delisting of cancer drugs”, 2019.

Chapter 4. Healthcare system and governance

Key takeaways

- Indonesia and Malaysia show the strongest growth in healthcare spending and China the biggest reduction in out-of-pocket expenditure. Still, mainly high-income countries meet international standards in funding levels. HTA mechanisms are developing in most of the countries, but are not currently used effectively. These will be essential for prioritisation as UHC programmes expand.
- Middle-income countries are still developing the necessary infrastructure to deliver on promises of universal coverage and lag behind the standards of high-income countries. Strengthening primary care networks and technological innovation can help increase coverage cost-effectively.
- Most countries have adopted intersectoral policies for health and wellbeing to address the social and environmental determinants of health. Given constrained resources and rising NCD burdens, middle-income countries should establish strong governance structures to make efficient use of resources.

Financial and institutional support

Political will to advance healthcare provision was measured through the indicators of spending and institutional development. First, a composite score for general expenditure on health as a percentage of total government spending was calculated considering the

average magnitude and the average growth rate between 2007 and 2016 (based on WHO data). This way, countries with sustained growth or with already-high levels of spending can both be acknowledged. Indonesia had the strongest growth, with a 5.7% average annual increase, followed by Malaysia with 3.2%. In terms of level of spending, Japan was in the top position with an average 20.9% across the ten-year period, followed by Australia with 16.7%. When the composite score (for both growth and magnitude) was considered, the leaders were Japan, Indonesia and South Korea. China, the Philippines and India came in at the bottom.

The index also evaluated the ten-year trend in out-of-pocket expenditure as a percentage of current health expenditure. China has experienced the biggest reduction among the ten countries, averaging a 3.9% annual drop between 2007 and 2016, taking out-of-pocket expenditure from 51% to 36%. Indonesia and Thailand come next with average annual reductions of 2.9% and 2.2% respectively. Malaysia and Vietnam are at the bottom of the scale with actual increases of 0.7% and 2.0% respectively. As a reference, 20% or less is recommended as an optimal level of out-of-pocket expenditure for reducing instances of catastrophic or impoverishing health expenditure.⁷⁴ Out of the ten countries examined only Australia, Japan and Thailand meet this standard.

To measure the coverage of essential health services, the ICP used the WHO's index of service coverage which accounts for tracer interventions such as "reproductive, maternal,

⁷⁴ Chatham House, "Shared Responsibilities for Health A Coherent Global Framework for Health Financing", 2014.

⁷⁵ World Health Organisation, "UHC service coverage index", 2020.

newborn and child health, infectious diseases, non-communicable diseases and service capacity and access among the general and the most disadvantaged population".⁷⁵ The leading countries in this indicator are Australia, South Korea, Japan and Thailand, tied first, with scores equal or above 80 (in a 0 to 100 scale). At the bottom are the Philippines, Indonesia and India.

According to Dr Feisul funding is a key obstacle at the moment in Malaysia. "The current level of spending is not enough to cope with NCDs and the rapidly ageing population," he notes. Governments are recommended to spend about 5% of GDP on health in order to adequately support universal health coverage.⁷⁶ Among the ten countries, only Australia and Japan (and very nearly South Korea) reach that level (see Table 7).⁷⁷

As an important measure of institutional development, the ICP examined the presence of HTA programmes operating independently of payers and providers, considering also their influence in decision making. Australia and South Korea got top scores due to the presence of HTA programmes and a legislative requirement for HTA results to be used in decision making. China, India, Indonesia, Japan, Malaysia, the Philippines, Thailand and Vietnam also feature HTA programmes but show no obligation for results to be used in decision making.

The design of HTA mechanisms must be customised to local requirements and the intervention being assessed, and no one model is suitable for all situations.⁷⁸ In addition, the power of HTA as a policy-informing tool is not well understood or realised across Asia.⁷⁹ The use, and calculation, of appropriate cost-effectiveness thresholds remains controversial,⁸⁰ and understanding of this among policy makers is limited.⁸¹ One widely utilised threshold for determining if a health intervention is cost-effective is based on per-capita GDP, a calculation that the WHO-*Choosing Interventions that are Cost-Effective* project points out should never be used as a sole determinant for decision making. Crucially, GDP-based cost-effectiveness ratios—or other estimates of willingness to pay—provide no information on affordability, budget impact or the feasibility of implementation.⁸² In addition, an emerging school of thought suggests that other forms of multicriteria decision analysis may be more appropriate for assessing cancer interventions.⁸³ Despite these limitations, appropriately scaling these decision-making mechanisms is crucial to meet competing healthcare needs, particularly in middle-income countries, where new UHC programmes are met with limited budgets. Thailand—whose HTA mechanism is often praised—is notably the only country other than the UK which explicitly determines a cost-effectiveness threshold⁸⁴ (currently

⁷⁶ M Jowett *et al.*, "Spending targets for health: no magic number", Health Financing Working Paper No. 1, *World Health Organisation*, 2016.

⁷⁷ WHO data, available from World Bank data.

⁷⁸ G Liu *et al.*, "The Development of Health Technology Assessment in Asia: Current Status and Future Trends", *Value in Health Regional Issues* 2020;21:39–44.

⁷⁹ S Tantivess *et al.*, "Health Technology Assessment capacity development in low- and middle-income countries: Experiences from the international units of HITAP and NICE", *Frontiers in Health Research* 2017;6:2119.

⁸⁰ MY Bertram *et al.*, "Cost-effectiveness thresholds: pros and cons", *Bulletin of the World Health Organization*, 2016.

⁸¹ A Luz *et al.*, "Identifying priority technical and context-specific issues in improving the conduct, reporting and use of health economic evaluation in low- and middle-income countries", *Health Research Policy and Systems*, 2018.

⁸² *Ibid.* Bertram *et al.*

⁸³ P Carrera, "Are current ICER thresholds outdated? Valuing medicines in the era of personalized healthcare", *Expert Review of Pharmacoeconomics & Outcomes Research*, 2016.

⁸⁴ R Shwarzer *et al.*, "Systematic Overview of Cost-Effectiveness Thresholds in Ten Countries Across Four Continents", *J Comp Eff Res*, 2015.

Table 7: Health expenditure and UHC coverage

Country	Total health expenditure as a proportion of GDP, 2017	Government health spending out of total government expenditure, 2017	Out-of-pocket spending out of current health expenditure, 2017	Coverage of essential health services, 2015
Australia	9.2%	17.8%	18.2%	87%
China	5.2%	9.1%	36.1%	79%
India	3.5%	3.4%	62.4%	55%
Indonesia	3.0%	8.7%	34.6%	57%
Japan	10.9%	23.6%	12.8%	83%
Malaysia	3.9%	8.9%	37.9%	73%
Philippines	4.4%	7.1%	53.0%	61%
South Korea	7.6%	13.4%	33.7%	86%
Thailand	3.7%	15.0%	11.1%	80%
Vietnam	5.5%	9.5%	45.3%	75%

Sources: WHO, Global Health Observatory and Global Health Expenditure Database, <http://apps.who.int/gho/data/node.main.GHEDGGHEDGGESHA2011?lang=en>, <http://apps.who.int/nha/database>, <http://apps.who.int/gho/data/view.main.INDEXOFESSENTIALSERVICECOVERAGEV>

set at THB160,000 per QALY/DALY and not referenced to per capita GDP).⁸⁵ Thailand's Health Intervention and Technology Assessment Programme (HITAP) was established in 2007 and its work has guided coverage decisions made by the National Health Assembly, which consider not only cost-effectiveness but also societal values.⁸⁶ This process has enabled the development of a national medicines list and the benefits package under the UHC programme. According to Dr Ilbawi, "augmenting HTA mechanisms is an important pillar that can help establish priority interventions.

Once the priority interventions are selected, there should be a dialogue on how to build system capacity". Effective communication is a vital aspect of the process, with experience in Japan highlighting that HTA may be used—or perceived to be used—as simply a method to limit access to government spending.⁸⁷ Engaging a diverse range of stakeholders, especially patient representatives whose voices are not often heard in the HTA process, is important for successful implementation that meets the specific demands of each region.

⁸⁴ R Shwarzer et al., "Systematic Overview of Cost-Effectiveness Thresholds in Ten Countries Across Four Continents", *J Comp Eff Res*, 2015.

⁸⁵ Y Teerawattananon. "The CE threshold(s) in Thailand". Presented at: ISPOR Asia Pacific, Tokyo 2018, Issues Panel 10th September.

⁸⁶ Ibid. Bertram *et al.*

⁸⁷ Ibid. Liu *et al.*

For these agencies to fulfil their role of advising on both the efficiency and effectiveness of interventions they should be supported with political commitment, institutional development, technical competencies and appropriate funding.⁸⁸

Infrastructure

Ensuring sufficient infrastructure remains a challenge for the lower-middle-income countries. For Dr Ngelangel, in the Philippines the main challenge with infrastructure is ensuring equity in care given the difficulties of reaching the entire population in the archipelago. As part of the country's new cancer programme, there is a commitment to develop a network of cancer centres divided in progressive levels of complexity and with an important foundation in community-based primary care facilities. "In the community they can do awareness, primary prevention, immunisations, screening. Then, as you go up, biopsies, CT scans, treatment," she adds.

Few places experience more complex infrastructure challenges than Indonesia, a country spanning over 17,000 islands. "Transportation costs for many people are a concern," notes Dr Thabrany. He points to the difficulties of adhering to treatment when transportation is not a one-off, but follow ups are required. "We should find a new way to reach [patients], but innovations are limited." To address these difficulties, some telemedicine initiatives are emerging in the country, such as a teleradiology programme⁸⁹ and an app for basic doctor consultations,⁹⁰ among others from the public and private sectors.⁹¹

India is another country with a remarkable challenge ahead. The country has a vast population, much of which is currently underprovided for in terms of cancer services. "People in villages and smaller cities don't have access to a strong public health system where they can walk in to be screened or to be diagnosed at an early stage," says Dr D'Cruz. However, he notes important initiatives in the development of cancer facilities across the country being spearheaded by both the Ministry of Health and the Department of Atomic Energy.

Governance

The last cluster of the ICP addresses intersectoral action and overall public sector governance. The first indicator, developed by The Economist Intelligence Unit, examines the existence of national policies for health and wellbeing addressing social determinants of health. All countries but Japan had one (see Table 8). Recent examples of work in this direction include China's five-year plan on public healthcare (2016-2020) which covers intersectoral policies to address social determinants of health. It addresses areas such as sanitation, health education and promotion, healthy lifestyles, physical activity and assistance for the poor.⁹² Malaysia's 2016-2025 Non-Communicable Diseases Strategy places significant emphasis on adopting a multisectoral approach to preventing NCDs. The plan prioritises four NCD risk factors: tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol.⁹³

⁸⁸ P Leelahavarong et al., "Health Technology Assessment in Thailand: Institutionalization and Contribution to Healthcare Decision Making: Review of Literature", *International Journal of Technology Assessment in Health Care*, 2019.

⁸⁹ B Wiweko et al., "Overview the development of tele health and mobile health application in Indonesia", *2016 International Conference on Advanced Computer Science and Information Systems*, 2016.

⁹⁰ Nikkei Asian Review, "Telehealth apps rise in Southeast Asia due to doctor scarcity", 2018.

⁹¹ Deloitte Indonesia, Bahar Law Firm and Chapters Indonesia, "21st Century Health Care Challenges:

A Connected Health Approach: Megatrends in Health care", 2019.

⁹² State Council of China, "China issues five-year plan on public healthcare", 2017.

⁹³ Ministry of Health, National Strategic Plan for Non-Communicable Disease, 2016.

Table 8: ICP assessment of selected governance aspects

Country/indicator	Health technology assessment	Intersectoral action for health and health equity
	Score 0-2	Score 0-1
Australia	2	1
China	1	1
India	1	1
Indonesia	1	1
Japan	1	0
Malaysia	1	1
Philippines	1	1
South Korea	2	1
Thailand	1	1
Vietnam	1	1

Note: Higher scores mean better performance.

Sources: WHO, Health Technology Assessment Country Profiles, <https://www.who.int/health-technology-assessment/country-profile/en>; Economist Intelligence Unit research.

In India the National Health Policy 2017 articulates intersectoral co-ordination at the national and sub-national levels to optimise health outcomes. The policy calls for co-ordination of health and non-health ministries to address priority determinants of health. It covers tobacco, alcohol and substance abuse, air pollution, healthy diets and regular exercise.⁹⁴ For Dr D’Cruz, however, further intersectoral collaboration should be a priority. As the Ministry of Health, state governments and the Department of Atomic Energy all have responsibilities in cancer control, he asserts the “need to have one proper policy as to who will lead cancer”.

Lastly, “control of corruption” was included as a measure of overall government efficacy, based on data from the World Bank. The significance of this indicator lies on the effects of corruption on efficient use of resources and, ultimately, on health outcomes.⁹⁵ Here again there was a marked split between high-income Australia and Japan (with a superior performance) and the middle-income countries. As the latter advance through UHC, it is vital that they develop strong institutions and enforce governance frameworks that consider efficacy, transparency and accountability in order to make the best use of limited resources.

⁹⁴ Ministry of Health and Family Welfare, “National Health Policy”, 2017.

⁹⁵ National Academies of Sciences, Engineering, and Medicine, “Crossing the global quality chasm: Improving health care worldwide”, 2018.

Box 3: Governance underpinning consolidation of Thailand's UHC programme

Thailand's journey to universal health coverage (UHC) has been traced back to the 1970s when different schemes to provide healthcare to vulnerable populations appeared. By 2000, healthcare services reached about 70% of the population through one scheme or another.⁹⁶ Until then, however, the insurance landscape was fragmented and out-of-pocket payments accounted for 30% of all health expenditures.⁹⁷

A major development occurred in 2002 when the National Health Security Act extended health insurance coverage to all citizens. A Universal Care Scheme was created and launched nationally. Comprehensive care took some time to develop as it had to be accompanied by the development of necessary infrastructure. Political commitment, development of technical capacity and multi-stakeholder co-operation were key pillars of the implementation process.^{100, 101}

The system is composed of three different schemes: the Civil Servant Medical Benefit

Scheme under the finance ministry (CSMBS), the Social Security Scheme under the labour ministry (SSS—a contributory scheme) and the Universal Coverage Scheme (UCS) under the public health ministry, which covers over 70% of the population.¹⁰²

The UCS relies on general taxation for funding rather than co-payments, which reduces barriers of access to the poorest population.¹⁰³ The benefits package is comprehensive and includes medical care and rehabilitation, high-cost treatments and emergency care. Equality between the UCS and SSS is intended. The service is free at the point of service, as co-payments were abolished in 2006.¹⁰⁴

The journey to UHC in Thailand is widely recognised as a success. Outcomes include a drop in catastrophic health expenditures,¹⁰⁵ reduced child mortality and increased uptake of antiretroviral therapies and renal replacement therapy.¹⁰⁶ It has also been beneficial to productivity by reducing obstacles to work due to sickness.¹⁰⁷

⁹⁶ S Thaiprayoon And S Wibulpolprasert, "Political and Policy Lessons from Thailand's UHC Experience", ORF Issue Brief, 2017.

⁹⁷ ILO Social Protection Department, "Universal Health-care Coverage Scheme, Thailand".

⁹⁸ ThaiLaws, "National Health Security Act, B.E. 2545 (2002)".

⁹⁹ ILO Social Protection Department, "Universal Health-care Coverage Scheme, Thailand".

¹⁰⁰ The Guardian Labs, "What Thailand can teach the world about universal healthcare".

¹⁰¹ S Thaiprayoon And S Wibulpolprasert, "Political and Policy Lessons from Thailand's UHC Experience", ORF Issue Brief, 2017.

¹⁰² K Sumriddetchkajorn *et al.*, "Universal health coverage and primary care, Thailand", *Bulletin of the World Health Organisation*, 2019.

¹⁰³ V Tangcharoensathien *et al.*, "Health systems development in Thailand: a solid platform for successful implementation of universal health coverage", *The Lancet*, 2018.

¹⁰⁴ ILO Social Protection Department, "Universal Health-care Coverage Scheme, Thailand".

¹⁰⁵ *Ibid.*

¹⁰⁶ V Tangcharoensathien *et al.*, "Health systems development in Thailand: a solid platform for successful implementation of universal health coverage", *The Lancet*, 2018.

¹⁰⁷ A Wagstaff and W Manachotphong, "The Health Effects of Universal Health Care: Evidence from Thailand", Policy Research Working Papers, 2012.

The system's intelligent organisation and planning, regarding medicine purchasing for example, has been commended, as has its infrastructure developments and use of evidence-based approaches. The Health Intervention and Technology Assessment Programme (HITAP) plays a key role in selecting services and technologies.¹⁰⁸ As this all started when Thailand's annual income per head was below US\$2,000.¹⁰⁹ Thailand has become a role model in that UHC is achievable even when resources are limited.

While the downstream benefits of UHC on improved cancer outcomes is yet to be seen (see introduction of this report), Dr Sangrajrang comments that "UHC has had a great impact in cancer control, as screening, prevention and treatment are all covered". Cancer treatment is indeed part of the UCS offering (chemotherapy, radiotherapy

and surgery). Crucial to supporting access to treatment has been the country's readiness to try mechanisms such as compulsory licensing, price negotiation with manufacturers and pooled procurement.¹¹⁰ A study found "adequate access to first- and second-line medicines for both early- and advanced-stage cancers", but with some inequity between the UCS and SSS and the CSMBS.¹¹¹

Other recent developments in the cancer response include measures of prevention, such as taxing alcohol and tobacco to fund health promotion activities, training professionals and designing strategies to reach rural areas. Cervical cancer screening has been incentivised through implementing fee-for-service payment mechanisms with providers and there has been promotion of breast self-examination.¹¹²

¹⁰⁸ Centre for Global Development, "Thailand's Universal Coverage Scheme", 2015.

¹⁰⁹ S Thaiprayoon And S Wibulpolprasert, "Political and Policy Lessons from Thailand's UHC Experience", ORF Issue Brief, 2017.

¹¹⁰ R Sruamsiri *et al.*, "Policies and Programs to Facilitate Access to Targeted Cancer Therapies in Thailand", *PLoS ONE*, 2015.

¹¹¹ C Patikorn *et al.*, "Patient access to anticancer medicines under public health insurance schemes in Thailand: a mixed methods study", *Thai Journal of Pharmaceutical Sciences*, 2019.

¹¹² F Knaul *et al.*, "Financing Cancer Care in Low-Resource Settings", *Chapter 17*, 2015.

Chapter 5. UHC lessons from Southeast Asia

Key takeaways

- UHC programmes in Southeast Asia have shown accomplishments such as increasing financial protection among the poor and previously uninsured population. They have proved expanding access is possible even with constrained resources. Challenges include completing enrolment, reducing out-of-pocket expenditures and improving management mechanisms.
- Going forward, the countries in the region should pay attention to: the quality of healthcare offerings; updating benefits packages to reflect disease burdens; ensuring sustainability in finances; strengthening primary care networks; boosting infrastructure and service supply; and balancing private sector provision.
- Southeast Asian countries will benefit from the development of HTA mechanisms, supporting prioritisation and evidenced-based decision making. Countries should also engage in knowledge-sharing and integration at a regional level.

Further, across Asia as a whole there were the greatest disparities in healthcare access between urban and rural settings in 2015,¹¹⁴ a concern that is voiced over and over by experts in the region. This means there is still some way to go in achieving universal coverage. The experience of Thailand and Malaysia, and more recently Indonesia, the Philippines and Vietnam, offer a number of lessons.

Rolling out UHC programmes is possible even across populous and complex territories and when resources are limited.. Thailand has achieved health coverage figures similar to those of high-income countries despite its status as a middle-income country. Indonesia and the Philippines have embarked on the task of reaching their entire populations in spite of their complex geography. In wider Asia, China's accomplishment of reaching a population of over 1.3bn in a short time is possibly unparalleled in the world. Factors such as public support, political commitment, decided investment, adequate fiscal capacity, delegation to local governments and an implementation strategy are seen as crucial to its success.¹¹⁵

Achieving full coverage of the population may take years and careful design. The Philippines, for instance, has faced challenges in enrolment of the population, with non-poor people enrolled as poor,¹¹⁶ and in Indonesia a segment that is neither too rich nor too poor is finding it difficult to join the scheme (the "missing middle").

Lessons so far

Over the last two decades, countries across Southeast Asia have embarked on ambitious UHC initiatives and success stories are already numerous. Still, by WHO estimates, in 2018 there were still 65m people in the region who were impoverished as a result of healthcare spending.¹¹³

¹¹³ PK Singh et al., "Universal health coverage in the World Health Organisation South-East Asia Region: how can we make it business unusual?", WHO South-East Asia Journal of Public Health, 2018.

¹¹⁴ International Labour Organisation, "More than half of the global rural population excluded from health care", 2015.

¹¹⁵ H Yu, "Universal health insurance coverage for 1.3 billion people: What accounts for China's success?", Health Policy, 2015.

¹¹⁶ A Querri et al., "The challenges of the Philippines' social health insurance programme in the era of Universal Health Coverage", Public Health Action, 2018.

In Vietnam enrolment is still lagging behind, even among those employed in the formal sector who provide crucial contributions to the system.¹¹⁷ To address coverage, the World Bank recommends strategies such as financing the system through general taxation to subsidise the poor, promoting education and awareness of the programmes, creating family enrolment schemes and enforcing compliance among the formal sector.¹¹⁸

UHC programmes have brought much needed financial protection. Thailand and more recently the Philippines have experimented with financing through general taxation, allowing for the reduction or elimination of co-payments which can be a barrier for access among the poorest. Still, challenges remain. High levels of out-of-pocket spending are observed in most countries examined in this study. Currently only Australia, Japan and Thailand maintain overall levels of out-of-pocket expenditure necessary to limit instances of catastrophic health spending.

Payment, procurement and medication management approaches, including the use of generics and issues related to substandard or counterfeit medicines, are vital to system sustainability.¹¹⁹ In Thailand, strategic purchasing of medicines has been noted as crucial to cost containment.¹²⁰ The Indian state of Rajasthan accomplished better medicine availability through increased public spending, establishment of

an institution working on selection, quantification, procurement and quality assurance (the State Medical Corporation), and the implementation of an electronic procurement platform.¹²¹

The way forward

Countries should commit to developing benefits packages that are responsive to their disease burdens and should update them constantly. Across the region some UHC packages have been noted as outdated.¹²² For example, a comparison between the Philippines' top diseases and the offerings of the "Z Benefits" package showed imbalances.¹²³ Going forward, a priority will be to acknowledge the rising incidence of NCDs, aggravated by ageing trends in the region. Further, as witnessed in more developed economies, the key to containing a rising NCD burden lies in promotion and prevention.¹²⁴ To update benefits packages, countries should rely on systematic consideration of the evidence to prioritise interventions. Within Southeast Asia, Thailand has accomplished significant progress in terms of HTA mechanisms, while in the Philippines and Vietnam this needs greater commitment.¹²⁵

As coverage and service commitments grow, countries will need to pay close attention to financial sustainability of their health systems. For Dr Bazon, balancing the promises of universal coverage with the management of limited funding is an "ongoing struggle" in developing countries.

¹¹⁷ The World Bank, "Moving Toward Universal Coverage of Social Health Insurance in Vietnam".

¹¹⁸ Ibid.

¹¹⁹ World Health Organisation, "The world health report: health systems financing: the path to universal coverage", 2010.

¹²⁰ V Tangcharoensathien *et al.*, "Health systems development in Thailand: a solid platform for successful implementation of universal health coverage", *The Lancet*, 2018.

¹²¹ World Health Organisation, "Universal Health Coverage (UHC): Everyone, Everywhere".

¹²² C Bredenkamp *et al.*, "Emerging challenges in implementing universal health coverage in Asia", *Social Science and Medicine*, 2015.

¹²³ K Obermann *et al.*, "The role of national health insurance for achieving UHC in the Philippines: a mixed methods analysis", *Global Health Action*, 2018.

¹²⁴ V Tangcharoensathien *et al.*, "Health systems development in Thailand: a solid platform for successful implementation of universal health coverage", *The Lancet*, 2018.

¹²⁵ C Bredenkamp *et al.*, "Emerging challenges in implementing universal health coverage in Asia", *Social Science and Medicine*, 2015.

Funding of the system through general taxation in Thailand, for instance, has allowed the removal of co-payments to assist the poor. However, overall sustainability is challenged by the prospect of raising enough resources through taxation when a large portion of the population is poor or works in the informal sector.¹²⁶ In Vietnam, the World Bank suggests solutions such as raising tobacco taxes, periodic reviews of premiums charged and benefits packages, as well as reviews of provider payment mechanisms and procurement processes which can help in cost containment.¹²⁷ Overall, national funding commitments should also step up to meet international standards for universal coverage financial protection.

A focus on primary care or community-based solutions is a key strategy to address future challenges in terms of efficiency, effectiveness and geographic reach. Evaluations of primary care centres in Vietnam show, for instance, superior quality in community-based health centres, which can help reduce pressures in hospitals and promote health outcomes.¹²⁸ For Dr Sangrajrang, a network of more than 10,000 primary care units spread across the country is one of Thailand's main infrastructure achievements. The WHO suggests boosting primary care facilities beyond the provision of basic services so they become entry points to a well-co-ordinated health system designed around patients' needs.¹²⁹

Where the financial protection offered by UHC programmes has driven the demand for healthcare services, there will be increasing pressures on developing capacity to provide these services.¹³⁰ As Dr Ilbawi puts it, so far "most of the focus has been on financing, but results also include access and quality". Workforce development is a priority in the region, and efforts to augment it will require comprehensive strategies that include education programmes, geographical distribution to underserved areas, appropriate funding, equipment, facilities and strong management.¹³¹

Given the significant presence of the private sector in the region, balancing public/private provision needs careful consideration. According to WHO data, the private sector provides up to 70% of ambulatory care in Southeast Asia.¹³² For Dr Banzon, the historic underprovision by the government has opened up opportunities for the private sector. "The private sector provided the capacity and the government doesn't see a reason to catch up as the needed capacity was provided by the private sector." In his view, management of this balance will need careful fine-tuning to break the cycle of public underprovision. In Malaysia, balancing public and private sector provision has reportedly helped in scaling up.¹³³ Dr Somasundaram, however, notes a problem with drainage of skilled labour from the public sector into the private sector.

¹²⁶ K Sumriddetchkajorn *et al.*, "Universal health coverage and primary care, Thailand", *Bulletin of the World Health Organisation*, 2019.

¹²⁷ The World Bank, "Moving Toward Universal Coverage of Social Health Insurance in Vietnam".

¹²⁸ NT Hoa *et al.*, "Patient experiences of primary care quality amongst different types of health care facilities in central Vietnam", *BMC Health Services Research*, 2019.

¹²⁹ K Sumriddetchkajorn *et al.*, "Universal health coverage and primary care, Thailand", *Bulletin of the World Health Organisation*, 2019.

¹³⁰ C Bredenkamp *et al.*, "Emerging challenges in implementing universal health coverage in Asia", *Social Science and Medicine*, 2015.

¹³¹ PK Singh *et al.*, "Universal health coverage in the World Health Organisation South-East Asia Region: how can we make it business unusual?", *WHO South-East Asia Journal of Public Health*, 2018.

¹³² *Ibid.*

¹³³ RP Rannan-Eliya *et al.*, "Improving Health Care Coverage, Equity, And Financial Protection Through A Hybrid System: Malaysia's Experience", *Health Affairs*, 2016.

Broadly, managing two sectors (with different incentives) presents challenges in cost containment and in homogenising quality standards.¹³⁴

With the growing complexity of health systems it will be necessary to enhance information systems to track outcomes and efficiency. Already, integration of services for the entire population necessitates databases. “The existence of the database allows for better monitoring, outcome tracking and governance,” notes Dr Banzon. “They have to develop enough information resources to keep track of individuals.” Thailand, for instance, monitors population coverage, service coverage and financial risk protection through national surveys, administrative data, disease registries and research. They have developed infrastructure and systems, policies and institutional development, co-ordination and technical capacity to achieve this.¹³⁵

Lastly, in a region working towards further integration, opportunities for knowledge sharing should be pursued. The WHO reports progress has been made through research partnerships such as the Asia Pacific Observatory on Health Systems and Policies and the Alliance for Health Policy and Systems Research.¹³⁶ Regional collaboration can help with the creation of guidelines to address common cancer challenges.¹³⁷ Additionally, if increasing intra-regional mobility is expected, national insurance schemes should start considering coverage implications for non-nationals in more detail.¹³⁸

¹³⁴ HM Lim *et al.*, “Chasm in primary care provision in a universal health system: Findings from a nationally representative survey of health facilities in Malaysia”, *PLoS One*, 2017.

¹³⁵ W Witthayapipopsakul *et al.*, “Achieving the targets for universal health coverage: how is Thailand monitoring progress?”, *WHO South-East Asia Journal of Public Health*, 2019.

¹³⁶ PK Singh *et al.*, “Universal health coverage in the World Health Organisation South-East Asia Region: how can we make it business unusual?”, *WHO South-East Asia Journal of Public Health*, 2018.

¹³⁷ H Akaza *et al.*, “UICC International Session: What are the implications of sharing the concept of Universal Health Coverage for cancer in Asia?”, *Cancer Science*, 2016.

¹³⁸ RLLR Guinto *et al.*, “Universal health coverage in ‘One ASEAN’: Are migrants included?”, *Global Health Action*, 2015.

Conclusions

The cancer challenge across Asia-Pacific is growing across the board, significantly impacting communities, societies and economies overall. Managing mortality among lower- and middle-income countries requires special attention. Most countries in the region are setting up foundational policies and institutions needed for a cancer response, although of varied quality. With a concerning prevalence of risk factors such as smoking, creating policy frameworks to promote healthy lifestyles should be a priority. Facing high rates of late cancer diagnosis, middle-income countries in the region should strengthen cancer prevention and early diagnosis strategies.

There are important gaps in service availability between the high-income and middle-income group, the latter with severe under-provision in rural settings. As UHC commitments grow, countries across the region should sustain funding levels that guarantee financial protection for the population facing illness. Middle-income countries should look to develop primary care networks, prioritisation mechanisms and strong governance to raise effectiveness and to make the most of limited resources.

This study introduces the Index of Cancer Preparedness—Asia-Pacific, a tool to assess national readiness in the face of the disease. The 45 specific areas measured by the ICP are indicative of attributes that are desirable in a comprehensive response to cancer. The ICP can help countries compare their progress with, and possibly learn from, the performance of others. We encourage interested readers to explore the findings.

This study, though, can only offer an overview of the situation in Asia-Pacific, a vast and diverse region. It is then for each country to develop a strategy that meets its specific needs. Policymakers, particularly in middle-income countries, may well consider some key principles learned through this review:

Laying the foundations for a cancer response: Although cancer plans are visible there is still progress to be made, especially in the middle-income countries. Assigning institutional roles and budgets to cancer programmes is essential to enable effective implementation. Complete registries and local research for better understanding of the country's cancer landscape are prerequisites to good planning.

Focusing on implementation and measuring results: Few countries make provision for implementation of cancer plans, and even among those whose policies address this issue, evidence of monitoring or implementation was scarce. This must be addressed to translate policy into outcomes for patients and provide feedback for improving and refining cancer control plans to meet evolving needs.

Boosting prevention and early diagnosis: Tobacco control and promotion of healthy lifestyles should be addressed given high prevalence of risk factors in the region, such as smoking. Gaps should also be closed in immunisation strategies for HPV and hepatitis B. Given a tendency towards late-stage cancer diagnosis, countries should examine best practices in early diagnosis which are achievable in their specific contexts. Special attention should be given to ways of reaching rural or peripheral areas with prevention and treatment initiatives.

Closing gaps in cancer care: While UHC programmes are making progress, more effort should go into closing persistent access gaps and ensuring quality of services across the cancer continuum. Strengthening primary care networks and bolstering community-based care through technological innovation should be considered to increase geographic reach. Addressing sustainable financing of policies and increasing public healthcare spending in-line with WHO recommendations are major challenges for many countries, particularly in Southeast Asia. Widening and updating the cancer treatments covered by national insurance schemes and including palliative care services are areas that need improvement on a continuous basis. Ongoing efforts for universal

enrolment should be pursued and healthcare expenditure sustained to meet international standards and to reduce out-of-pocket spending.

System efficiency and prioritisation:

countries with new UHC programmes and constrained resources should constantly review their benefits packages based on disease burdens. With limited budgets, it will be essential to strengthen prioritisation frameworks to select the most cost-effective interventions across all healthcare needs. Finally, the involvement of patients in designing cancer control programmes should be emphasised across the board.

Appendix: Methodology

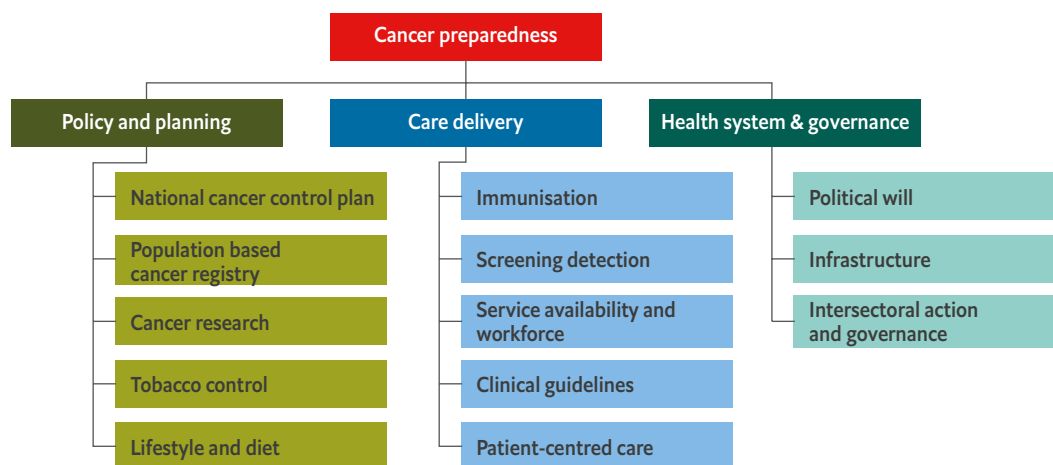
The Index of Cancer Preparedness (ICP) measures how ready healthcare systems are for the challenge of cancer across 28 countries. It seeks to answer the question: how well prepared are countries to achieve major reductions in premature deaths from cancer, increase cancer survival rates, and improve quality of life for cancer patients and survivors?

The ICP explores the issue of cancer preparedness through three broad domains: 1) policy and planning; 2) care delivery; and 3) health systems and governance. The first domain on policy and planning focuses

on levers that are mostly in the hands of policymakers. The second domain looks at the delivery of cancer-specific activities within health systems themselves, while the final domain acknowledges that cancer cannot be defeated by cancer-focused activities alone.

The three domains are broken down into 13 sub-domains and 45 indicators. Scores are weighted and normalised, so that the final score for each country ranges from 0 to 100, with 100 being the highest possible score, representing complete alignment with best practice.

The three domains and 13 sub-domains of the ICP



Source: ICP.

The design of the ICP was driven by the creation of a theoretical framework: the curation of a collection of indicators that measure elements of cancer preparedness that are inherently desirable. We therefore hope that the ICP can offer value beyond simply the final composite score, and be used to drive discussion based around action at the

domain, sub-domain and indicator level.

In addition to the ICP we have also collected data for 21 background indicators to support correlation analysis. These indicators provide context but are not computed in the index scores; they include indicators of healthcare spend, health outcomes and risk factors.

The ICP was built following a literature review and an expert panel meeting. It covers a total of 28 countries from across five geographic regions: Africa/Middle East, Latin America,

North America, Asia-Pacific and Europe; and three World Bank income groups: lower-middle, upper-middle and high. A full index methodology report is also available.¹⁶⁷

¹⁶⁷ The Economist Intelligence Unit, Index of Cancer Preparedness, Methodology report, <http://worldcancerinitiative.economist.com/index-of-cancer-preparedness/ICPMethodology.pdf>

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