

Innovative funding models for cancer treatment in Asia

A landscape study of funding trends and innovations

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Foreword

There is no bigger challenge facing Asian health systems than cancer. The impact on health is already immense and is set to increase further still. Outcomes continue to lag behind other regions. Too many people are missing out on the diagnostics, treatment, and care that could help them live longer, healthier, and more productive lives.

The financial impact of cancer is also significant – on patients, their families, health services, and economies. As more people are diagnosed with cancer and the cost of delivering treatment grows, this cost will only increase.

Even without the pressures of the future, there is a need to act now to address the gaps that exist in the funding, access, and coverage of cancer services across Asia. The personal and economic cost is too great to do nothing.

Yet, doing something is challenging. Budgets are stretched, and as we move towards universal health coverage across Asia, there are few easy choices. The good news is that – as this report shows – many countries are adopting innovative approaches to funding cancer services. These approaches are filling gaps, enabling improvements in care, and – importantly – benefiting patients.

At ACCESS Health International, we are committed to identifying and sharing best practices in health services and health financing that will inform governments, the private sector, and the local communities they serve to ensure optimal health and well being. This report brings together some of the most compelling examples of good practice, analyzes them, and identifies different models which might be most appropriate for different health systems across Asia. Although the focus is Asia, we hope that some of the themes identified will also be useful in other regions.

The report sets out recommendations which we hope different stakeholders will reflect and act upon as they take action to improve the funding of cancer services.

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ACCESS Health is an international think tank, advisory group, and implementation partner. We work to improve access to high quality and affordable health care. We also work to reduce health disparities by shaping the social and environmental determinants of health. We conduct practical, evidence-based research. We cultivate partnerships. We foster health innovation. We establish long term, in residence, country and regional programs.

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Executive Summary

Scientific advances in cancer care are improving survival and quality of life. However, too many people across Asia have been denied access to the benefits of these improvements.¹ Insufficient funding of cancer services is one key factor that has led to variations in access to care and insufficient coverage for those who do receive it.²

Although Asian countries differ considerably in their economic development and health coverage, the growing cancer burden is a common challenge facing them all. Asia is home to approximately half of the world's new cases of cancer and cancer related deaths; every day over 17,500 people will be diagnosed with cancer across the region, a number set to rise to nearly 25,000 by 2025.³ Even without action to improve cancer outcomes, funding requirements will rise dramatically. If we aspire to improve outcomes so that they are comparable with best-performing regions, then the challenge will be greater.

Cancer costs are just one aspect of the funding pressures facing health systems across Asia. A recent prediction suggests that total health care spending will increase for the ten ASEAN countries from \$420 billion to \$720 billion by 2025.⁴ Therefore, with health care costs and the burden of cancer rising, current funding strategies alone will be insufficient. Many Asian countries have recognized this challenge and are responding. Part of this response is to consider and adopt innovative funding solutions, which enable them to draw on new sources of funding to address specific challenges in cancer care and gaps in coverage affecting particular groups in the population.

The purpose of this report is to ensure that these innovative funding examples are identified, analyzed, and – where appropriate – emulated and scaled up so that more patients can benefit. In order to map and understand how countries are seeking to strengthen health financing systems for cancer, our research team undertook a landscape study of funding mechanisms in eight countries in Asia (China, India, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam) and the Hong Kong Special Administrative Region of China (Hong Kong SAR).

In total, we collated 208 mechanisms, which enabled us to identify major funding models and to assess patterns, considering their impact on funding, access, and coverage of cancer services. We have categorized nearly one fifth (40/208) of the mechanisms studied as 'innovative', in that they either enhanced existing arrangements or adopted a new approach to reduce gaps in the amount of funding, access to funding, and coverage of cancer treatment and care.

This report categorizes innovative funding models according to:

- ▷ The lead funding entity
- ▷ Whether they acted alone (single) or in partnership (multiple)
- ▷ Whether the innovation built on a traditional mechanism (enhanced) or adopted a different approach (new)
- ▷ The problem or gap that they sought to address

We found that the majority of innovations across Asia were partnership models, in which traditional funders came together to improve an existing funding mechanism in order to address a specific gap in cancer care (we call these 'multiparty enhancements').



Although this report has assigned different recommendations to different types of funder, it is ultimately the partnerships between these funders, whether traditional or new, that will be most valuable in addressing funding gaps for cancer patients in the future.

It is important to recognize that countries in Asia are at very different stages of health development and therefore face varying challenges. This report identifies the innovative models which are likely to be suitable for different countries, according to their stage of health development:

- ▶ Where universal health coverage is advanced and covers the majority of cancer services, innovative funding models can be used to strengthen overall health financing systems and enable the rapid introduction of new technologies.
- ▶ Where universal health coverage is rapidly developing, governments can adopt and enable innovative funding models to provide quality cancer care to more patients. Partnerships between public and private funders can help address high out of pocket costs for patients until universal health coverage covers a comprehensive package of cancer care.
- ▶ In countries where universal health coverage is less advanced, there is – perhaps through necessity – a greater diversity of innovative funding mechanisms for cancer treatment and care. In these countries, nonprofit and private sector organizations can develop collaborative funding models to meet specific patient needs, while supporting government efforts to expand universal health coverage.

Recommendations

As a result of our research, we make a series of recommendations.

Governments should:

- ▶ Increase health budgets and raise per capita health expenditures in line with the growing burden of noncommunicable diseases, including cancer.
- ▶ Strengthen, fund, and implement national cancer control plans, with specific goals to improve cancer outcomes and measurable indicators of current and future cancer expenditures.
- ▶ Work with public and private funders to initiate and/or enable innovative approaches to cancer funding, exploring partnerships that will fill funding gaps, and cover populations and services not reached by existing funding mechanisms.

Private insurers and financial institutions should:

- ▶ Explore partnership and risk sharing models that increase access to affordable financing for people with cancer in countries with high out of pocket costs or where there is demand for treatment and services not covered by current funding and universal health coverage.
- ▶ Partner with providers and other funders to develop new financing models to support groups who face obstacles in accessing funding for health care, including low income individuals, the elderly, and vulnerable populations.



Health care industries should:

- ▷ Partner with other traditional funders to develop new funding models that expand access to the treatment and services that they provide, through access programs, knowledge sharing, and co financing partnerships.
- ▷ Seek partnerships that extend financial support for cancer services beyond their own products, in areas where health funding options are minimal, focusing on populations who have the greatest need and the least ability to pay.
- ▷ Bring their global experience of health care financing mechanisms to bear through collaborations with governments, non governmental organizations, and international organizations to identify, spread, and scale innovative funding models across countries.

Health and cancer nonprofit organizations should:

- ▷ Explore partnership opportunities with governments, insurers, and financial institutions to develop patient centric, affordable insurance, and other health financing options, and to improve awareness of the support that already exists.
- ▷ Raise awareness of and encourage debate on the importance of adequate and sustainable financing that supports improvements in patient outcomes and holds partners accountable for the delivery of funded cancer control plans.

International donors and international organizations should:

- ▷ Recognize the urgency of tackling cancer in Asia and worldwide by placing cancer treatment and care high on the agenda for international cooperation, and ensuring governments are held accountable for developing and implementing national cancer control plans with appropriate funding.
- ▷ Commit resources to programs that reduce the funding gap for cancer treatment and care in low and middle income countries, through targeted programs that address specific, underserved populations.





1

Cancer in Asia

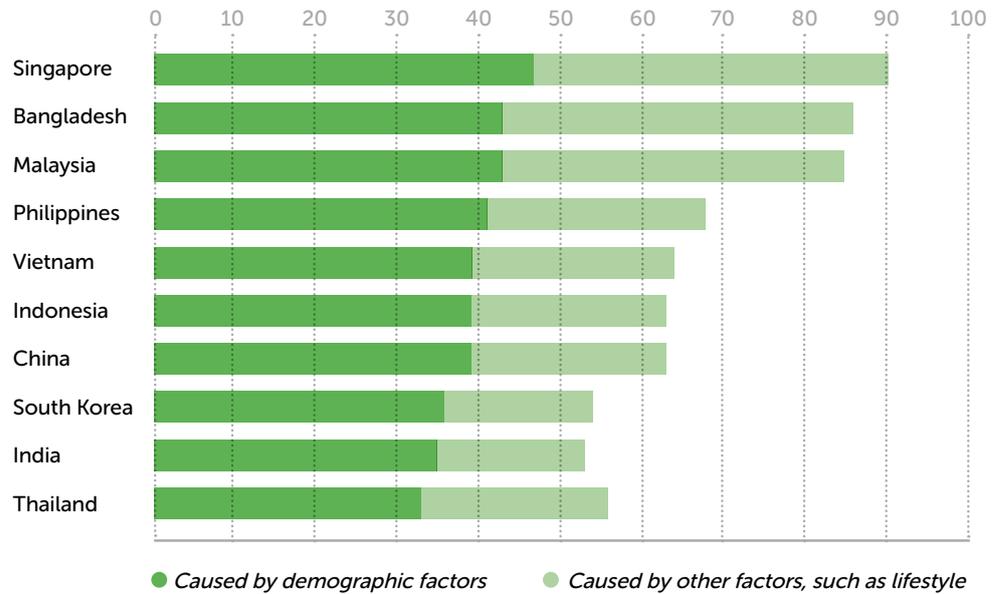
The funding gap

The impact of cancer

The challenges posed by cancer in Asia are significant and growing. China alone accounts for one fifth of the global burden of disease. In India, there are an estimated one million new cases of cancer per annum, while the Southeast Asia region adds approximately 700,000 new cases every year.^{5,6,7}

Experts estimate that cancer incidence in Asia will increase by forty four percent from 6.4 million cases in 2012 to 9 million cases in 2025.⁸ As Figure 1 indicates, this rise will be driven by a combination of demographic and lifestyle factors and, crucially, will be unevenly distributed across the continent. Although some countries will be affected more than others, a significant growth in incidence rates can be observed for every nation, meaning that every government in the region must take action now.⁹

Figure 1: Total percentage growth in cancer incidence 2012-2030



"There is still a stigma by policy makers that cancer cannot be treated. This is not true. We need to bring awareness to public and policy makers that cancer is treatable even at later stages."

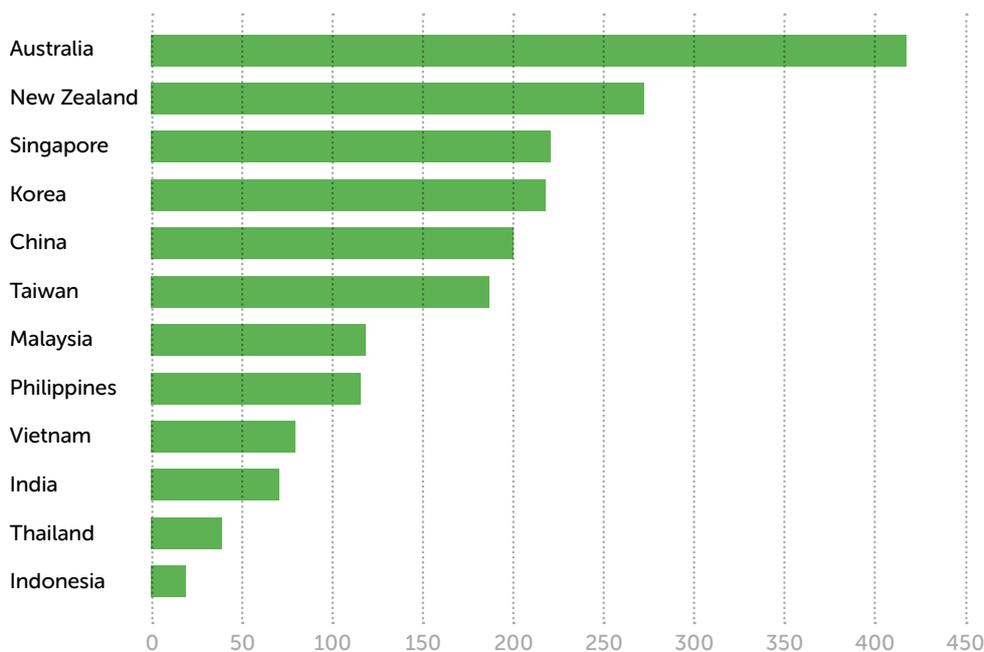
Dr. Hasbullah Thabrany, Chair, Centre for Health Economics and Policy Studies, Universitas Indonesia



The good news is that advances in cancer prevention, diagnosis, and treatment offer new opportunities to improve outcomes, and are already extending and improving patients' lives. For instance, South Korea, Japan, and Taiwan have made significant investments in cancer services and enjoy survival rates comparable with other OECD nations.^{10,11} However, these improvements are not available to everyone in the region. For example:

- ▶ Gaps in access to primary care services mean that many people do not have access to the services that can support early diagnosis of cancer. One of the contributing factors to these access gaps is the shortage of primary health care professionals in comparison to more developed health systems, which can be clearly observed in Figure 2.¹²

Figure 2: Number of doctors per 100,000 population



- ▶ The last decade has witnessed a dramatic development of medical imaging, enabling more accurate diagnosis.¹³ However, these technologies are largely unavailable in low and middle income countries.
- ▶ There is a deficit of access to radiotherapy, with no country in Asia completely meeting its population needs.¹⁴
- ▶ There are large variations in access to innovative cancer medicines in Asia, impacting outcomes. For example, a study found that nearly two thirds of the reduction in breast cancer mortality in the USA is attributable to new medicines,¹⁵ but many patients across Asia are unable to access these treatments.¹⁶



Cancer outcomes – either in terms of mortality or survival – are therefore poorer in many Asian countries than other parts of the world.¹⁷ In 2012, for instance, the ratio of cancer deaths to the number of new cancer cases was 0.66 in Asia, compared to 0.33 in North America.¹⁸ As the impact of cancer in Asia grows, there is a risk that this disparity will widen.

The context beyond cancer

The challenge of funding cancer is not occurring in isolation. In 2015, countries pledged their commitment to universal health coverage under Sustainable Development Goal 3.8. The core principle of universal health coverage is to ensure that “all people can obtain the health services they need without suffering financial hardship.”¹⁹

Several countries in Asia are taking steps to implement universal health coverage. In February 2018, the government of India announced a massive expansion of the country’s health insurance that, if implemented, will represent the world’s largest public health care program.²⁰ In Indonesia, the government rolled out the national single payer health care program, the Jaminan Kesehatan Nasional (JKN), in 2014, with the goal of covering 240 million people by 2019, making it currently the largest universal health coverage program in the world.²¹

These commitments to universal health coverage offer an important opportunity to increase access to cancer services. It is important to recognize that most universal health coverage plans – at this stage – provide access only to basic cancer care. Delivering improvements in cancer care and outcomes in parallel with rolling out universal health coverage will therefore be financially challenging.

Other noncommunicable diseases are also creating pressure on health services. The efforts of countries such as Thailand,²² Singapore, and Malaysia²³ to improve the prevention and management of noncommunicable diseases should in time deliver benefits for cancer care, but many cancer control plans in Asia are either still in development or are not fully implemented or funded.²⁴

The financial challenge – for people and health services

Funding and cancer outcomes appear to be linked. In countries where individuals bear high out of pocket costs for health care, they are at greater risk of mortality due to cancer.^{25,26}

The Action Study, which examined the financial impact of cancer on households in Southeast Asia, found that seventy five percent of patients diagnosed with cancer faced financial catastrophe or death within a year.²⁷

A 2016 study on the health impact of the global economic downturn of 2008 to 2010 found that reductions in government health budgets in high income countries contributed to an increase of 260,000 cancer deaths.²⁸ As governments reduced public financing for health, individuals bore the financial burden of treatment and care through increased out of pocket spending, which had negative consequences on cancer survival.

The following table shows the levels of out of pocket spending as a portion of total health expenditure in the eight countries surveyed in this study and Hong Kong SAR (Table 1).²⁹ The proportion of people covered by private health insurance gives an indication of how patients in different countries meet their out of pocket costs.

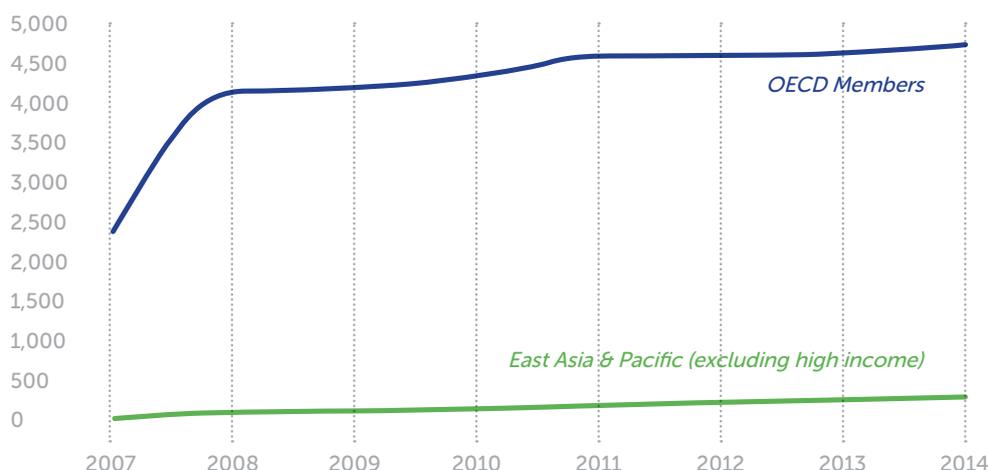


Table 1: Key health financing figures in Asia

Country/region	Out of pocket payments ³⁰ % of total health expenditure	Public expenditure ³¹ % of total health expenditure	Private health insurance % of population
China	32	56	9.1
Hong Kong SAR	35	49	12 ³²
India	62	30	<5 ³³
Indonesia	47	37	<10 ³⁴
Malaysia	35	55	15-20 ³⁵
Philippines	54	34	<10 ³⁶
Singapore	55	42	75 ³⁷
Thailand	34	54	15-20 ³⁸
Vietnam	12	78	<10 ³⁹

It is important that policies on cancer funding are informed by evidence, yet information on expenditure on cancer services in Asia is incomplete.⁴⁰ In the absence of information on cancer expenditure, this study looked at total health care spending as an indicator of the amount of money available for cancer services in different countries. A comparison of average per capita health expenditures of low to middle income Asian countries with OECD member countries shows a significant difference in the amount of per capita spending on health care, including cancer services (Figure 3).⁴¹

Figure 3: Comparison of average of per capita spending on total health expenditures in Asian countries with OECD countries over a 20-year period



The disparity in Figure 3 is striking and, irrespective of comparisons with other countries, it is clear that Asia faces a looming health care funding challenge. Indeed, a recent prediction suggests that total health care spending will increase for the ten ASEAN countries from \$420 billion to \$720 billion by 2025 as populations grow, age, and develop new diseases.⁴² The funding gap is therefore real, significant, and will impact upon cancer services and patient outcomes.

In light of these challenges, it is important to develop a strong understanding of the funding models currently in place across Asia, to be able to identify clearly where the gaps associated with these exist, and to grasp how innovative funding models can provide solutions. This was the central goal of our research, the methodology behind which is explained in the following chapter.





2

Study methodology

Research methodology

This landscape study of cancer funding mechanisms was conducted through online research and interviews with twenty two key opinion leaders between November 2017 and January 2018. The research team undertook a comprehensive search through general and academic search engines in English and Mandarin (the languages of the team) to identify funding mechanisms for cancer treatment and care for each country and region. Where possible, information was taken directly from the website of the funding source for its description (e.g. Ministry of Health website for government schemes).

For each country/region, the following information was collected:

- Funding mechanism
- Main funders
- Partnerships
- WHO dimensions: *Funding, Access, Coverage*

Country/region selection

The Asian health landscape is diverse, with countries at very different stages of their development. In order to better understand the approaches adopted for cancer funding, a balanced group of eight countries and Hong Kong SAR was selected for further study.

The criteria used to select these countries and regions were:⁴³

- Cancer burden
- Availability of information on health funding systems
- Diversity of approaches to health funding
- Diversity of health system development

The study countries selected were:

- Low Middle Income:** Philippines, Vietnam, India, Indonesia
- Upper Middle Income:** China, Malaysia, Thailand
- High Income:** Hong Kong, Singapore

Inclusion criteria for funding mechanisms

In order to be included in this study, a funding mechanism had to provide monetary or in-kind support to individuals for at least one of the following cancer treatment and care services:

- Screening
- Diagnosis
- Surgery
- Radiology
- Medical oncology
- Palliative care

It is important to note that this study did not look at funding models for the supply (e.g. salaries, equipment, infrastructure) of cancer treatment services. This topic is considered in other reports.⁴⁴



The three health financing dimensions: funding, access, coverage

The World Health Organization has recognized three key dimensions of health systems which are important for universal health coverage: the proportion of health costs covered (funding), who is covered (access), and which health services are covered (coverage).⁴⁵

We have used this model to examine the extent to which cancer services are covered in this study. We define these dimensions in relation to cancer as follows:

Funding: the amount of financial protection from external sources that help offset the out of pocket burden for cancer care.

Access: the extent to which the entire population has access to funding to pay for cancer services and the extent to which cancer funding is equitable among different population groups.

Coverage: the extent to which cancer funding prioritizes each of the basic cancer and treatment care services: screening, diagnostics, radiology, surgery, medical oncology, and palliative care.

The absence of financial resources impacts each of these dimensions, increasing the out of pocket burden on patients, reducing access for groups in the population and diminishing the extent of coverage for people who do have access. Asian countries are increasingly seeking to use innovative funding approaches to address identified gaps in one or more of these dimensions. This report seeks to analyze these approaches, consider the role they can play in supporting improvements in cancer care, as well as make recommendations that might maximize their impact.

Defining innovation

The chief purpose of this study was to identify new and innovative models of cancer funding in the region. Therefore, we need to clearly define what we mean by innovative. We have deemed a funding model to be innovative if it either enhances existing arrangements – extending them to a new demographic group or a new part of the treatment pathway – or adopts an entirely new approach to address one or more of the three gaps outlined at the outset of this report, namely funding, access, and coverage. According to this definition, nearly one fifth (40/208) of the mechanisms surveyed in our study brought an ‘innovative’ approach to cancer funding.





3

Traditional models

of funding cancer treatment and care in Asia

As set out in Chapter 1, better funded health systems tend to deliver better cancer outcomes. The goal of all funding models – whether innovative or traditional – should be to efficiently and fairly provide the funding required to deliver high quality cancer care that protects patients from financial exposure, provides access to as many people as possible, and covers the broadest range of clinically effective services.

Each of the countries and regions surveyed in this study approaches this task in a different way. This chapter examines the current, traditional models in cancer funding in the region before looking at innovations that are changing this landscape.

Health funding is a mixed picture in Asia

The countries analyzed in this study have very different levels of funding and access arrangements, as set out in Table 2.

Table 2: Health system overview and cancer funding landscape across countries/regions

Country/region	System funding (USD)	System access	Cancer coverage
China	\$420 per capita per year ⁴⁶	97% of population covered by government run Social Health Insurance (SHI) as of 2016. ⁴⁷	Most cancer treatment funding comes through government social health insurance and out of pocket payments. Private insurers cover 30% of the population, but represents only 2% of national health expenditures. ⁴⁸
Hong Kong SAR	\$2,198 per capita per year ⁴⁹	N/A	Hong Kong provides funding for cancer care through budget-based public financing, which accounts for 48% of total health expenditures, although coverage remains low and there is a high out of pocket burden. ⁵⁰
India	\$79 per capita per year ⁵¹	15% of population covered by government health insurance as of 2017. ⁵²	Cancer treatment funding in India is heavily reliant on out of pocket expenditures. The national government provides health financing through specialized schemes for the poor and civil servants, but funding is minimal. The extent of government support for cancer is state dependent.



Table 2 (continued): Health system overview and cancer funding landscape across countries

Country/ region	System funding (USD)	System access	Cancer coverage
Indonesia	\$99 per capita per year ⁵³	70% of population able to access health care through the state run, single payer Jaminan Kesehatan Nasional (JKN). ⁵⁴	While universal health coverage intends to provide comprehensive coverage, it provides minimal funding per capita. ⁵⁵ Patients seeking more than very basic cancer treatment face a high out of pocket payment burden.
Malaysia	\$456 per capita per year ⁵⁶	Government taxation-based universal healthcare covers the entire population. ⁵⁷	Malaysia's taxation-based universal coverage system provides access to some early detection programs and "satisfactory clinical management of common cancers." ⁵⁸ Patients pay out of pocket payments for access to innovative treatments.
The Philippines	\$135 per capita per year ⁵⁹	90% of population covered under PhilHealth, the government run national health insurance scheme. ⁶⁰	The Philippines is a primarily an out of pocket market for cancer treatment and care. The government offers health care benefit packages through PhilHealth but the level of service is basic. ⁶¹
Singapore	\$2,752 per capita per year ⁶²	100% of population covered by MediShield Life and 67% covered by Integrated Shield Plan. ⁶³	Singapore provides funding for high quality cancer care through mandatory social health insurance. ⁶⁴ Funding and coverage of services is augmented through public private partnerships with private insurers. Patients 'top-up' their plans with out of pocket payments for access to innovative technologies.
Thailand	\$228 per capita per year ⁶⁵	Over 99% of the population covered by three public insurance schemes as of 2015. ⁶⁶	Thailand has a developed system of universal health coverage that provides early detection and good clinical management of cancer. ⁶⁷
Vietnam	\$142 per capita per year ⁶⁸	81.7% of population covered by government sponsored insurance plans as of 2017. ⁶⁹	While Vietnam is working towards universal health coverage, the level of funding under government social health insurance is not adequate to provide comprehensive high quality cancer services. ⁷⁰ Out of pocket payments for innovative treatments are therefore significant.



Traditional funders

Over eighty percent of the 208 funding mechanisms for cancer services identified by this study can be classified as 'traditional'. Traditional funders include:

- ▷ Individuals making out of pocket payments
- ▷ Governments funding health through general taxation or social insurance
- ▷ Private insurers providing cover
- ▷ Nonprofit organizations offering assistance
- ▷ The health care industry (e.g. pharmaceutical, diagnostics or medical device maker) offering financial support programs

The characteristics associated with traditional models are set out below in Table 3.

Table 3: Traditional models of funding for cancer treatment and care in Asia

Funders	Mechanisms	Main role
Individual	Individuals make out of pocket payments at the time of service.	Individuals have to pay out of pocket for any cost related not covered by other funders.
Government	Government finances health care services through either taxation-based funding or social health insurance. Entitlement programs assist special groups.	Government is the main entity providing cancer funding through general health financing schemes.
Private insurers	Funding for cancer services occur primarily through an insurance plan that covers a wide spectrum of critical illnesses. Standalone cancer insurance products exist but are less common.	Insurers complement governments via private systems of risk pooling.
Health care Industry	Assistance programs offering either general financial support or targeted aid towards specific cancer treatment and care services.	Patient support programs provide low cost or free cancer services to those in need.



Impact on funding, access and coverage

Each traditional funder can play an important role in providing financing for cancer services. Their approach and the mechanisms they adopt result in different effects on the dimensions of funding (financial protection), access, and coverage:

▷ Funding:

While governments are a major source of cancer treatment funding for the population, they often provide low levels of financial protection for the individual seeking high quality cancer care and treatment, especially in low and middle income countries.

In contrast, all other funders contribute little to overall funding at the population level but are important in reducing out of pocket payments for certain groups of cancer patients. Private insurance provides higher levels of funding to those who can afford it, but leaves poorer citizens unable to purchase more comprehensive support. Nonprofit organizations and health care industries step in to supplement other mechanisms, reducing out of pocket burden when other funding options are exhausted.

▷ Access:

Access is easiest in government-backed schemes that cover entire populations and offer supplementary protection to the poor. Although all governments in this study have one or more such welfare schemes, the level of funding support is minimal.

Nonprofit and health care industry programs are not widely accessible to the broad population; they usually target support at lower income groups. In contrast, private insurance is highly inequitable as it is tied to an individual's economic and health status, thereby favouring younger, healthier groups. In five of the surveyed countries, the level of private insurance coverage was below ten percent.

▷ Coverage:

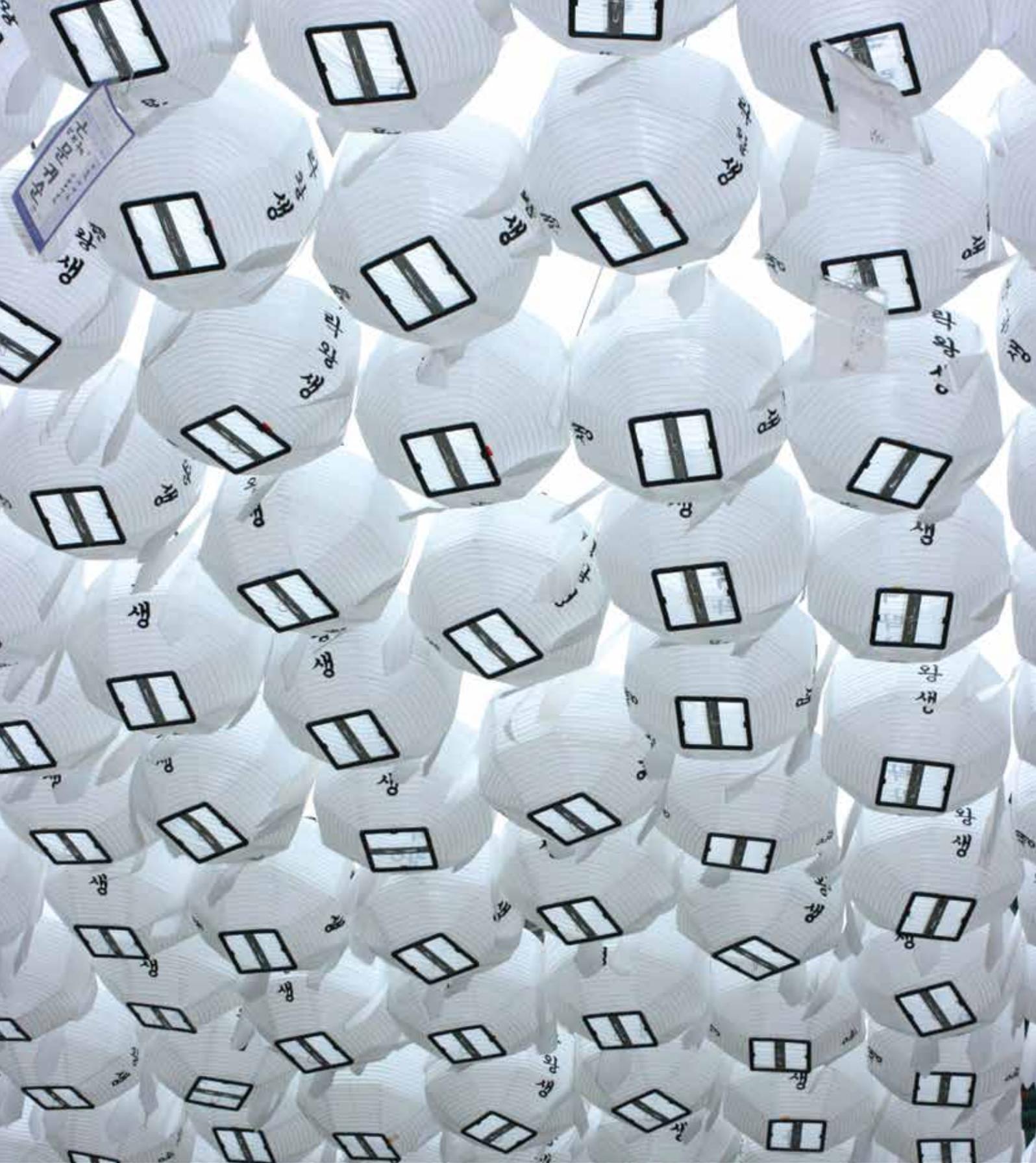
Government and private insurers mostly fund costs incurred in hospitals, and their funding mechanisms tend not to be specifically focused on cancer. The governments of India, Singapore, and the Philippines have gone a step further by providing free or subsidized screening.

By contrast, nonprofit organizations and health care industries provide the most direct financial support for an individual's specific treatment and care costs, focusing on screening, novel technologies, and palliative care, which are often neglected by government or private insurance funders.

Although funders and mechanisms are similar across all the countries, the level of overall health care expenditure shapes the role they play and the quality of cancer services offered. For example, in Singapore and Hong Kong, higher per capita expenditure enables greater investment in cancer care, whereas in China, Indonesia, Philippines, and Vietnam, low per capita health expenditures translate into reduced access to high quality cancer services.

Despite these differences, a common theme across every health system is that 'traditional' funders are seeking to introduce innovative financing approaches to address gaps in funding, access, and coverage. Chapter 4 analyzes the different types of innovative funding model that are developing as a result.





4

Innovative models

of funding for cancer treatment and care in Asia

To date, traditional models of funding have been unable to address the growing funding gap for cancer services. As the impact of cancer in Asia grows and demand for access to quality cancer beyond the basic package provided under universal health coverage increases, additional funding solutions will be needed. This study reveals the number and diversity of innovative approaches to cancer funding which are being developed across the Asian countries and regions we studied. These models have been developed to meet the specific needs of very different health systems. As such, they vary in structure, origin, and focus.

Table 4 summarizes the forty examples of innovation identified in this report by country.

Table 4: Summary of examples identified by country/region

Country/ region	Universal health coverage	Examples of innovative funding models
The Philippines	Developing	The Philippines Charity Sweepstake Office My Child Matters (Sanofi) iCare (Merck) Ating Didibin (Pfizer) Glivec International Patient Assistance Program (Novartis) Philam Life Group Insurance Care
China	Developing	National health savings accounts Beijing Genomics Institute Home Screening Insurance Package National Insurance Programme for Catastrophic Diseases Zhong'An Colorectal Cancer Insurance Iressa/Cardinal Health (AstraZeneca) Tagrisso Fee Compensation (AstraZeneca) Anti-cancer Insurance Plan of Agricultural Bank of China Anti-cancer Plan for the Young and Middle-Aged of Shuidi Mutual Aid
Singapore	Strong	Medishield and Integrated Shield Plans Medisave AIA Prime Critical Cover Axa 360 Care
Vietnam	Developing	SeALady Cashback We Care for Her K-Care package HPV program Novartis Glivec International Patient Assistance Program Novartis VPAP Aid programs
Hong Kong SAR	Strong	Radi Collaboration SunHealth Cancer Shield Manulife Silvercare



Table 4: (continued) Summary of examples identified by country/region

Country/ region	Universal health coverage	Examples of innovative funding models
India	Weak	Kios Invest Breast Cancer (HER-2+) Development Impact Bond New India Insurance Cancer Insurance Scheme Indian Cancer Society Cancer Cure Fund Sparsh by Dr. Reddy The Blue Tree Program (Roche) Detect Early Save Her (DESH) by Piramal Novartis Oncology Access Program Karuna Trust Action for Community Organisation, Rehabilitation and Development
Thailand	Strong	Glivec International Patient Assistance Program (Novartis) Axios Cost Sharing Programs My Child Matters (Sanofi)
Malaysia	Strong	AXA Affin 360 CancerCare

This chapter seeks to analyze the themes that underpin these schemes, identifying similarities and opportunities for learning.

Categorizing innovation

In order to better understand the types of innovations that are developing and to make recommendations to inform future policy, we sought to categorize the innovative models according to their essential characteristics. In grouping the various funding models that exist within the region, we looked at:

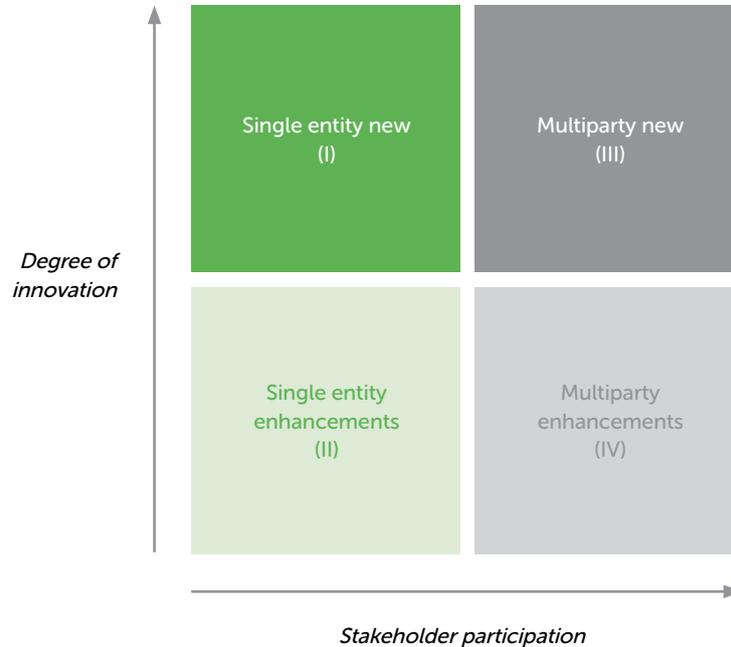
- ▶ The lead funding entity, whether they acted alone (single) or in partnership (multiple)
- ▶ The degree of innovation, whether the model built on a traditional mechanism (enhanced) or adopted an entirely different approach (new)
- ▶ The problem or gap that they sought to address (examined in Chapter 5)

Using these as our determinants, we separated innovative funding models into four distinct groups:

- Single entity new*
- Multiparty new*
- Single entity enhancements*
- Multiparty enhancements*



Figure 4: Matrix of innovation



Single entity new mechanisms

Single entity new mechanisms describe traditional funders that employ entirely new funding mechanisms to address one or more of the three gaps.

These are not common in the region and not specific to cancer. Our research only identified three instances where these models were used for (but not limited to) cancer treatment and care, all of which are run by governments.

In other regions of the world, there is growing interest in the use of so called 'sin taxes,' with some countries hypothecating revenue from these taxes to fund specific causes, including health or cancer services. Where no such tax is already in existence, this approach would also be considered a single entity new mechanism.

The purpose of a sin tax is to discourage a behaviour that can be expected to cause ill health while also raising revenue for services. Examples of sin taxes include:

- ▷ Tobacco duties
- ▷ Alcohol taxes
- ▷ Levies on the purchase of sugary drinks
- ▷ Salt taxes
- ▷ Gambling duties



Costa Rica, for example, has introduced duties on sugar, alcohol, and tobacco. These taxes have proven to be relatively popular with the public, particularly when revenues are explicitly linked to additional expenditure on health services.

However, there are some drawbacks to sin taxes. Notably, if the objective is to change behavior, then the tax will not be a sustainable source of revenue as consumption, and therefore income, will reduce over time.

We are aware that there is interest in the greater use of sin taxes in Asia. The Philippines, for example, has devoted revenue from sin taxes to fund PhilHealth,⁷² but other such plans are in their infancy and have yet to be translated into law. In these cases, they have not been included in our analysis.

Case study 1: Philippine Charity Sweepstakes Office

The Philippine Charity Sweepstakes Office is a government agency responsible for providing funds for national health initiatives, medical assistance programs, and charities that provide health services. By conducting charitable sweepstakes, races, and lotteries, the Philippine Charity Sweepstakes Office aims to maintain and expand the government's capability to provide a sustainable source of funding for health and welfare related projects.

The Philippine Charity Sweepstakes Office represents a new attempt from the government of the Philippines to diversify the source of funding for patients suffering from illnesses such as cancer. It boasts several projects that provide financial assistance to people affected by catastrophic diseases, including but not limited to cancer.

The Individual Medical Assistance Program, for instance, provides funding for cancer treatment such as chemotherapy and radiotherapy. Through the issuance of guarantee letters to hospitals or partner health facilities, the Individual Medical Assistance Program shoulders a certain amount of medical expenditure that would otherwise come from patients.

Another example is the At Source Ang Processing Program, in which the Philippine Charity Sweepstakes Office enters into an agreement with several private and government hospitals willing to provide chemotherapy drugs to cancer patients at a twenty percent discount rate in addition to providing the health services required by Individual Medical Assistance Program.⁷¹

Single entity enhancements

Single entity enhancements are mechanisms run by one of the four traditional funders that extend a current service to address a funding, coverage, or access gap.

Our research has identified eight such mechanisms across nine countries, four of which are private insurance plans that extend their offerings to an underserved market or provide holistic coverage with screening and palliative care.



Case study 2: Health savings accounts in China and Singapore

Health savings accounts are government run schemes that earmark individuals' savings for expenditure on designated health services.

In China, health savings accounts have been used for a long time to cover the expenses of items reimbursable under Social Health Insurance. In Singapore, health savings accounts mandate contributions from individuals to create a minimum level of savings that can only be used for health expenditures. Although existing for several decades in China and Singapore, they are not common in the region and other countries may only consider such savings accounts to boost personal financial protection against catastrophic illnesses.^{73,74}

Multiparty new mechanisms

Multiparty new mechanisms are partnerships between funders (traditional or new) that employ completely new approaches to address one or more of the three funding gaps.

Our research identified nine such mechanisms, compared to only four single entity new mechanisms, suggesting that partnerships are the main driver for the creation of completely new models in cancer financing.

Case study 3: Beijing Genomics Institute Canseq Cervical Cancer Home Screening and Insurance Package

The Beijing Genomics Institute's home screening and insurance package allows women to test themselves for human papillomavirus (HPV) in a private setting.

In partnership with Henan Zhongyuan Life Science Research Institute Co., Ltd., who is the main funder for the program, The Beijing Genomics Institute applies its cutting edge genome sequencing technologies to the detection of all sixteen HPV strains. After paying for one of the three plans (three years, nine years, or lifelong), users not only receive a home testing kit but also an anti-cervical cancer insurance plan attached to the screening package.

The scope and content of the insurance is contingent upon the screening result. However, it is not only a negative result that will activate the plan – a positive result can also act as a trigger, on the condition that, through treatment deemed appropriate by the program, the screening result turns negative in one year's time. All fees associated with screening, diagnostics, and treatment are fully covered by the Canseq program.⁷⁵



Multiparty enhancements

Multiparty enhancements are partnership arrangements that extend an existing mechanism of funding to new populations or services.

Multiparty enhancements are the most common form of innovation in the region. All traditional funders have engaged in partnership arrangements that either extend donation based support programs (e.g. through extended coverage in patient support programs) or further develop existing insurance models. All new funders have entered the realm of cancer financing through partnerships with one or more traditional funders.

Case study 4: Insurance Program for Catastrophic Diseases in China

The Insurance Program for Catastrophic Diseases is an integral component of China's Social Health Insurance scheme and an extension to the Basic Medical Insurance program.

A partnership between the government and private insurers, Insurance Program for Catastrophic Diseases covers designated portions of medical expenditures exceeding the maximal reimbursable amount of Basic Medical Insurance, thereby offering enrollees additional financial protection against severe illnesses, including but not limited to cancer. In this partnership, private insurers are responsible for the administration of the insurance plan, while the government manages the provision of funding to insurers. In most cases, Insurance Program for Catastrophic Diseases has a standalone funding pool that draws funds from the funding pools of other Social Health Insurance schemes.

Specific policies of the Insurance Program for Catastrophic Diseases vary from one locality to another, with national policies serving primarily as guidance for local policy making. Breaking from the national norm of two-tiered structures, Shenzhen, for instance, has a three-tiered system that considerably extends the financial protection of the enrollees.

The importance of partnerships

Of the forty innovative models identified in our research, seventy percent were driven by partnerships. The necessity for such partnerships is born out of the complex web of funding and service gaps, which cannot be resolved by any one party working alone. By pooling complementary expertise and capabilities, traditional funders have been able to address specific service gaps to meet particular patient needs.

We found a range of different types of partnership during our research. Common forms included:

- ▷ Public private partnerships
- ▷ Cross industry partnerships
- ▷ Nonprofit private partnerships
- ▷ Government international organization partnerships



"The future of innovative models such as instalment payment and outcome based insurance lies in collaborating with social insurance or private insurance as opposed to replacing them."

Mr. Xiaodong Zhang, CEO, Shanghai Meditrust Co., Ltd.

It is striking that, within these partnership models, private sector organizations have played a crucial role in driving collaborations. While their involvement is normally targeted at specific parts of the pathway where there is a commercial rationale to instigate partnerships, their contributions have consistently served as a catalyst for innovation more broadly, leading to improved outcomes across the board.

This can be ascribed to a number of key qualities unique to private sector organizations, namely valuable experience of working in a range of international health environments and strong understanding of the cancer in question.

"[In India], the public health schemes are providing too little financing help in the terms of coverage. The traditional way of out of pocket expenditure still remains a major mechanism of cancer financing."

Dr. Anup Karan, Associate Professor at Indian Institute of Public Health





5

The focus

of innovative funding models

The purpose or focus of the innovative funding models we identified varies as much as their structure and origin. Innovative models can be developed to address specific gaps in one or more of the funding, access, and coverage dimensions discussed earlier in the report. They can also be used to bring additional funding into the system, thereby strengthening cancer services as a whole. This chapter examines in more detail the gaps which different schemes address.

Broader focus models to address gaps in funding, access, or coverage

Some models have a very broad focus, seeking to strengthen and grow overall funding for cancer treatment and care. A prime example of this is the Philippine Charity Sweepstake Office, explored in Chapter 4, which provided an entirely new revenue stream for the government's attempts to expand cancer treatment services. It is not only governments, however, who have worked to this end. Increasingly, private sector organizations are helping to increase the overall capacity of Asian health care systems to fund cancer treatment, both through the creation of new income sources and the development of innovative insurance programs.

Case study 5: SeALady Cashback in Vietnam

SeALady Cashback is a Vietnamese sales based donation scheme – a type of funding model in which one or more private companies pledge to donate to a social cause by allocating a portion of a product's sales to charity.

These schemes typically involve the company including a brand or logo that identifies to consumers that sales from their purchase will be directed to a specific cause. While the approach has been successfully used on a larger scale elsewhere, namely with (Red) products for HIV/AIDS and Pink Ribbon products for breast cancer, it is yet to be rolled out extensively in Asia.^{76,77}

SeALady Cashback is an exception to this rule. A collaboration between SeABank and the Brighter Future Foundation, it aims to boost funding for breast cancer patients. For every VND 1 million that SeABank credit card users spend, they have the opportunity to contribute VND 2,000 to the Bright Future Foundation.



Case study 6:

Medishield and Integrated Shield Plans in Singapore

Across the region, different financing entities have come together to develop risk mitigation strategies that strengthen incentives to increase funds available for cancer treatment. In China, Vietnam, and India, these have resulted in new insurance offerings that extend treatment services to a wider populace.

An excellent working example of this can be found in Singapore, where a public private partnership has emerged between Singapore's Central Provident Fund Board and six private health insurers. The insurance package that has emerged is composed of two parts: the state backed Medishield Life, which offers protection for all Singaporean citizens and permanent residents against significant hospitalization charges, and an additional private insurance component known as Integrated Shield Plans. As of the end of 2016, sixty seven percent of Singapore's resident population had Integrated Shield Plan coverage and the remaining thirty three percent had Medishield Life coverage.

This partnership sees public and private schemes working in tandem. Specifically, in terms of cancer funding, the maximum amount offered for cancer treatment within an Integrated Shield Plan may exceed the maximum reimbursable amount under Medishield Life alone, as within Medishield there are significant caps on chemotherapy and brachytherapy. The six private insurers administer the additional private insurance component and also assist the Central Provident Fund Board with premium collection and claims disbursement for Medishield Life.

Targeted approaches to improving coverage

The majority of innovative models focus on addressing an identified need, either in a particular area of the cancer pathway or a particular group of the population. They tend to seek to address gaps in service coverage.

Focus on prevention

Much of cancer prevention is based on lifestyle changes, which can be challenging to design funding models around. However, there are examples focused on funding specific interventions intended to prevent cancer.

Case study 7:

HPV initiative in Vietnam

In Vietnam, the HPV initiative brings in multiple UN agencies to help provide widespread and affordable access to the vaccine against HPV, a virus commonly linked to cervical cancer. The vaccine has been recognized as an important prevention technology, but is largely unaffordable for the population. In Vietnam, international organizations have stepped in to co-finance access to the vaccine.⁸⁰



Focus on early diagnosis

In less well developed health systems, access to primary care, diagnostics, and support for suspected cancer can be limited. There are innovative funding models which are specifically intended to address this gap.

Case study 8: Early diagnosis programs in the Philippines and China

Screening and early diagnosis programs were a recurring theme in the funding models that we surveyed. These are concentrated largely in systems significantly lacking universal health coverage, especially those where rural health care is poorly developed.

One public private partnership, the 'My Child Matters' program between Sanofi and the government of the Philippines, improved access to early diagnosis and cancer treatment services for children with retinoblastoma and leukemia.⁸¹

As was the case with the Canseq Cervical Cancer home screening and insurance package (case study 3), many of these programs are used to tailor health care insurance plans. For example, Zhong'An Colorectal Cancer Insurance in China incentivizes customers to get screened by requiring potential scheme users to undergo a mandatory screening procedure.⁸²

Treatment

Innovative funding mechanisms to support specific cancer treatments are common, particularly where there is a gap in coverage, which would otherwise prevent patients from accessing a clinically appropriate treatment. There are many examples of pharmaceutical patient support programs across the region but few that extend access and coverage in innovative ways.

Case study 9: Pharmaceutical out of pocket payment schemes in China

These mechanisms provide financial support by allowing individuals to pay for specific drug treatments through instalments.

In China, two pharmaceutical programs have enabled patients to defer and space out payments. They are the Iressa and the Tagrisso fee compensation schemes.

The more recent Tagrisso program allows enrollees to spread the payment over twelve months, thereby reducing the financial barrier of patients to access treatment at the outset. The other component of the program, an outcome based insurance program, compensates patients if the medication did not result in improved health outcomes, thereby providing additional reassurance to users of the scheme.



Case study 10:

Development Impact Bond for HER-2+ breast cancer patients in India

The Development Impact Bond for HER-2+ breast cancer is a new practice of financing cancer care in India. The Development Impact Bond was developed by Kois Invest, in collaboration with Roche and Tata Memorial Hospital, as a response to the inequitable access to HER-2+ breast cancer treatment in India. Although the project is only at the stage of a feasibility study, the governments of Assam and Karnataka have shown great interest in the model.

The main objective of the Development Impact Bond is to reduce per patient cost of treatment for breast cancer. The program provides financial support for patients unable to pay out of pocket or through insurance for HER-2+ breast cancer treatment and care. Additionally, The Development Impact Bond allows each social investor to fund five to six hospitals in India, which would increase the success rate of HER-2+ breast cancer treatment at these hospitals to seventy to seventy five percent or even higher. Other possible interventions of the Development Impact Bond for HER-2+ patients include creating awareness of breast cancer screening, implementing standardized care for HER-2+ treatment on par with that available in the best hospitals in India, and providing post care support and follow up services over a period of five years.⁸⁵

Palliative Care

As identified in Chapter 3, funding for palliative care services is a weakness in many Asian health systems. There are some examples of where innovative funding models have been developed to address this gap, providing coverage for services which would have otherwise been unavailable.

Case study 11:

AXA 360 Cancer Care in Singapore

The AXA 360 Cancer Care plan is a comprehensive insurance scheme offering financial support for cancer patients for their full range of needs, including those at the end of a patient's life.

Representing the growing trend in private health insurance towards value based and patient centred services, the AXA 360 Care Plan is the first insurance policy in Singapore that takes a holistic approach to cancer, including support for screening, treatment at all stages of illness, and comprehensive after care services. The latter includes palliative care, medications for side effects, home visits by a nurse, and psychological support. Additionally, the AXA 360 Care Plan includes a concierge initiative that can help with the arrangement of a variety of services, like home and palliative care, that work to make the patient journey seamless.⁸⁶



Support for specific groups in the population to address gaps in access

There are also examples of innovative funding models which have been developed to support specific groups in the population in having access to cancer services. These include deprived groups and older people.

Case study 12: ManuSilver Care in Hong Kong

ManuSilver Care, an insurance package offered by Manulife Hong Kong, specifically targets those between the ages of fifty to eighty. This is the age demographic most vulnerable to cancer, with research showing that over sixty percent of cancers occur amongst people over sixty years of age.

The insurance package has a particularly strong cancer focus. It offers an 'early stage cancer benefit,' which provides each user with twenty five percent of the notional amount for each diagnosis of carcinoma-in-situ, and a 'major cancer benefit,' amounting to one hundred percent of the notional amount if late stage cancer is diagnosed. Holders who pay the premium up to the age of eighty five are covered until the age of a hundred, thereby ensuring that the most high risk segment of the population receives adequate protection.⁸⁷





6 | Conclusions and recommendations

The funding challenges posed by cancer in Asia are unavoidable. For individuals, health systems, and economies, the financial impact of cancer is set to grow considerably. Although measures can and should be taken to contain costs, more funding will be required to deliver better outcomes. The question then becomes how it should be delivered.

More funding will be required for cancer services

Traditional funding models contribute the vast majority of cancer funding across the countries included in this study, and it is likely that they will continue to do so. Irrespective of the level of funding currently provided for health care or the level of development within the health system, the contribution made by governments will need to continue to grow if health needs are to be met and the opportunities to improve cancer outcomes are to be realized.

Innovative funding models can play their part but governments will need to encourage them

This study discovered a range of exciting and innovative funding models. Although these tend to be focused on addressing particular issues or gaps within cancer care, collectively they can make a big contribution to those currently paying out of pocket for cancer services. The task for governments will be to identify the models most appropriate for their health system and the needs of their population, and to take action to adopt them in a sustainable way.

Collaboration creates opportunities to test new models

Innovations are frequently being driven by collaborations between different funding partners with a shared interest in improving cancer care and minimizing financial hardship. Increasingly, innovation is being driven by the private sector (health care industries or private insurers and financiers) seeking partnerships with traditional funders. Further study of the relative outcomes and success of innovative funding mechanisms is needed to understand the crucial ingredients for effective collaborations.

"For improvement to take place [to expand access to cancer services], we need to change the conversation between pharma, device manufacturers, hospitals, and insurers to bring creative solutions to the patients."

Mr. Steven Conway, Regional Head of Health at Allianz Asia Pacific



Innovative approaches should be tailored to the level of development of universal health coverage

While any of the innovative approaches to cancer funding identified here could be considered by any country, governments should tailor their approach according to the level of universal health coverage and their ambition for raising patient outcomes. Countries that enjoy good access to and coverage for basic cancer care should focus less on expanding the reach of their services and instead concentrate on improving the availability of the latest, most advanced medical innovations to the groups that need them most, which in turn will yield better outcomes. This can be achieved by supporting novel funding approaches that either strengthen services for high risk groups or widen access to new technologies that treat prevalent tumor types.

The time for action is now

The funding gap for cancer care is significant and, without action, will grow. If countries in Asia wish to improve cancer outcomes and ensure patients benefit from the scientific and technological advances in this field, this challenge will need to be addressed. Communities, governments, nonprofit organizations, and the private sector all have a role to play in addressing the funding gap.

Governments should:

- ▷ Increase health budgets and raise per capita health expenditures in line with the growing burden of noncommunicable diseases, including cancer.
- ▷ Strengthen, fund, and implement national cancer control plans, with specific goals to improve cancer outcomes and measurable indicators of current and future cancer expenditures.
- ▷ Work with public and private funders to initiate and/or enable innovative approaches to cancer funding, exploring partnerships that will fill funding gaps, and cover populations and services not reached by existing funding mechanisms.

Private insurers and financial institutions should:

- ▷ Explore partnership and risk sharing models that increase access to affordable financing for people with cancer in countries with high out of pocket costs and/or where there is demand for treatment and services not covered by current funding and universal health coverage.
- ▷ Partner with providers and other funders to develop new financing models to support groups who face obstacles in accessing funding for health care, including low income individuals, older adults, and vulnerable populations.



Health care industries should:

- ▶ Partner with traditional funders to develop new funding models that expand access to the treatment and services that they provide, through access programs, knowledge sharing, and co-financing partnerships.
- ▶ Seek partnerships that extend financial support for cancer services beyond their own products, in areas where health funding options are minimal, focusing on populations who have the greatest need and the least ability to pay.
- ▶ Bring their global experience of health care financing mechanisms to bear through collaborations with governments, nongovernmental organizations and international organizations to identify, spread, and scale innovative funding models across countries.

Health and cancer nonprofit organizations should:

- ▶ Explore partnership opportunities with governments, insurers, and financial institutions to develop patient centric, affordable insurance and other health financing options, as well as improving awareness of the support that already exists.
- ▶ Raise awareness of and encourage debate on the importance of adequate and sustainable financing that supports improvements in patient outcomes, and hold partners accountable for the delivery of funded cancer control plans.

International donors and international organizations should:

- ▶ Recognize the urgency of tackling cancer in Asia and worldwide by placing cancer treatment and care high on the agenda for international cooperation and ensuring accountability for national governments in developing and implementing national cancer control plans with appropriate funding.
- ▶ Commit resources to programs that reduce the funding gap for cancer treatment and care in low and middle income countries, through targeted programs that address specific, underserved populations.



Glossary of key terms

Access

The extent to which the entire population has access to funding to pay for cancer services and the extent to which cancer funding is equitable among different population groups.

Brachytherapy

A type of radiation therapy in which radioactive material sealed in needles, seeds, wires, or catheters is placed directly into or near a tumor.

Chemotherapy

The treatment of disease using chemical agents or drugs that are selectively toxic to the causative agent of the disease, such as a microorganism.

Coverage

The extent to which cancer funding prioritizes each of the basic cancer and treatment care services: screening, diagnostics, radiology, surgery, medical oncology, and palliative care.

Diagnosis

The determination of the cause of a patient's illness or suffering by the combined use of physical examination, patient interview, laboratory tests, review of the patient's medical records, knowledge of the cause of observed signs and symptoms, and differential elimination of similar possible causes.

Funding

The amount of financial protection from external sources that help offset the out of pocket burden for cancer care.

HER-2+ breast cancer

A form of breast cancer in which there are high levels of HER2 protein, which stimulate the cancer cells to divide and grow.

Human papilloma virus (HPV)

A virus that infects the skin and the cells lining body cavities. It is spread through close skin to skin contact, often during sexual activity. Some forms of HPV can cause cancer, particularly cervical, anus, and vulva cancer.

Leukemia

A cancer which starts in blood-forming tissue, usually the bone marrow. It leads to the over production of abnormal white blood cells, the part of the immune system which defends the body against infection.

Medical oncology

A branch of medicine that deals with the prevention, diagnosis, and treatment of cancer.

Multiparty enhancement

Partnership arrangements that enhance an existing mechanism of funding cancer treatment and care to address a funding, coverage, or access gap.

Multiparty new

Partnerships employing completely new approaches to address a funding, coverage, or access gap.

Noncommunicable diseases

Diseases that tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviours factors. They include cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes.

Out of pocket costs

Expenses for medical care that are not reimbursed, either by insurance or by the state.

Palliative care

Support provided to a person to alleviate or manage the symptoms of their cancer or the side effects of its treatment.

Prevention

Specific, population based and individual based interventions that aim to minimize the burden of diseases and associated risk factors.

Radiology

The branch of medical science dealing with use of x-rays, radioactive substances, and other forms of radiant energy in diagnosis and treatment of disease.

Retinoblastoma

A cancer that starts in the retina, the very back part of the eye. It is the most common type of eye cancer in children.

Screening

The process of testing a defined population of people who do not have symptoms of a disease with a view to diagnosing a condition at an earlier and more manageable stage.

Single entity enhancement

Mechanisms run by one of the four traditional funders that extend a current service to address a funding, coverage, or access gap.

Single entity new

Mechanisms run by traditional funders that employ entirely new funding mechanisms to address a funding, coverage, or access gap.

Social health insurance

A form of financing and managing health care based on risk pooling. It takes into account the health risks of the people on one hand, and the contributions of individuals, households, enterprises, and the government on the other.

Surgery

Medical treatment in which someone's body is cut open so that a diseased or damaged part can be repaired, removed, or replaced.

Sustainable development goals

A UN sponsored universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. They address climate change, economic inequality, innovation, and sustainable consumption.

Treatment

Interventions given with a view to managing a person's cancer, thereby extending their life and improving its quality.

Universal health coverage

The ability of all people and communities to use the promotive, preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship.

WHO Essential Medicines List

An internationally recognizable set of selected medicines that helps countries choose how to treat their priority health needs. The chosen medicines are required to be available at all times in adequate amounts and in appropriate dosage forms, at a price the community can afford.

References

- 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. *The Lancet*, Volume 0, Issue 0. Published online on January 30, 2018.
[http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(17\)33326-3.pdf](http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(17)33326-3.pdf)
- Knaut F. et al. "Chapter 17 Financing Cancer Care in Low-Resource Settings." *Cancer Disease Control Priorities, Third Edition (Volume 3)*. 1 November 2015.
- Web article. "The Burden. Cancer in Southern, Eastern, and Southeastern Asia." *The CANCER ATLAS*. The American Cancer Society. The International Agency for Research on Cancer. The Union for International Cancer Control. Accessed on February 26, 2018.
<http://canceratlas.cancer.org/the-burden/cancer-in-southern-eastern-and-southeastern-asia/>
- Solidiance, *The USD 320 billion healthcare challenge in ASEAN*, 2018.
<https://www.solidiance.com/insights/healing/white-papers/the-usd-320-billion-healthcare-challenge-in-asean>
- Web article. "The Burden. Cancer in Southern, Eastern, and Southeastern Asia." *The CANCER ATLAS*. The American Cancer Society. The International Agency for Research on Cancer. The Union for International Cancer Control. Accessed on February 26, 2018.
<http://canceratlas.cancer.org/the-burden/cancer-in-southern-eastern-and-southeastern-asia/>
- Mallath, Mohandas K et al. "The growing burden of cancer in India: epidemiology and social context." *The Lancet Oncology*. 2014. Volume 15, Issue 6, e205-e212.
- Kimman M, et al. "The burden of cancer in member countries of the Association of Southeast Asian Nations (ASEAN)." *Asian Pac J Cancer Prev*. 2012; 13(2):411-20.
- Web article. "The Burden. Cancer in Southern, Eastern, and Southeastern Asia." *The CANCER ATLAS*. The American Cancer Society. The International Agency for Research on Cancer. The Union for International Cancer Control. Accessed on February 26, 2018.
<http://canceratlas.cancer.org/the-burden/cancer-in-southern-eastern-and-southeastern-asia/>
- Global Cancer Observatory, *Globocan 2012: Estimated Cancer Incidence, Mortality and Prevalence Worldwide in 2012*. Accessed on 11 May 2018.
http://globocan.iarc.fr/Pages/burden_sel.aspx
- Kyu-Won Jung, MS et al, "Cancer Statistics in Korea: incidence, Mortality, Survival and Prevalence in 2014", *Cancer Research and Treatment: Official Journal of Korean Cancer Association*, 49(2): 292-305, March 2017
- Web article. "Japan's five-year cancer survival rate at 65.2%, survey of 209 hospitals shows", *The Japan Times*. Accessed on 11 May 2018.
https://www.japantimes.co.jp/news/2017/08/09/national/science-health/japans-five-year-cancer-survival-rate-65-2-survey-209-hospitals-shows/#.WvVFFS_Mz8s
- IHS Markit; Index Mundi, Physicians (per 1,000 people). Accessed on 13 May 2018, <https://www.indexmundi.com/facts/indicators/SH.MED.PHYS.ZS>
- Perez CA. & Mutic S. "Advances and future of Radiation Oncology." *Reports of Practical Oncology & Radiotherapy*. Volume 18, Issue 6, November–December 2013, Pages 329–332.
- Datta, NR. et al. "Radiation Therapy Infrastructure and Human Resources in Low- and Middle-Income Countries: Present Status and Projections for 2020." *International Journal of Radiation Oncology*. Vol. 89, No. 3, pp. 448e457, 2014.21.
- Plevritis SK. et al. "Association of Screening and Treatment With Breast Cancer Mortality by Molecular Subtype in US Women, 2000–2012." *The Journal of the American Medical Association*. 2018;319(2):154–164. doi:10.1001/jama.2017.19130.
- Global Oncology Trend Report 2016. IMS institute for Health Informatics.
<https://morningconsult.com/wp-content/uploads/2016/06/IMS-Institute-Global-Oncology-Report-05.31.16.pdf>
- Rengaswamy, S. et al. "Managing the changing burden of cancer in Asia." *BMC Medicine*. 2014. 12:3.
- Web article. "Research shows high cancer death rates in Asia". *Medical Press*, June 8 2016. Accessed on 24 April 2018.
<https://medicalxpress.com/news/2016-06-high-cancer-death-asia.html>
- UN Resolution A/RES/70. "Transforming our world: the 2030 Agenda for Sustainable Development." 25 September 2015.
- Web article. 1 February 2018. "India unveils 'world's largest' public healthcare scheme." *The British Broadcasting Corporation*. Accessed on February 28, 2018.
<http://www.bbc.com/news/world-asia-india-42899402>
- Web article. "Universal Health Coverage and Health Care Financing Indonesia." *World Health Organization*.
<http://www.searo.who.int/indonesia/topics/hs-uhc/en/>
- Noncommunicable Diseases Progress Monitor, 2017. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.
<http://apps.who.int/iris/bitstream/10665/258940/1/9789241513029-eng.pdf?ua=1>

23. Noncommunicable Diseases Progress Monitor, 2017. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO. <http://apps.who.int/iris/bitstream/10665/258940/1/9789241513029-eng.pdf?ua=1>
24. Website. The Cancer Control Portal. International Cancer Control Partnership. Last accessed February 26, 2018. <http://www.iccp-portal.org/>
25. The ACTION Study Group. "Catastrophic health expenditure and 12-month mortality associated with cancer in Southeast Asia: results from a longitudinal study in eight countries." *BMC Medicine* (2015) 13:190. DOI 10.1186/s12916-015-0433-1.
26. Maruthappu M. "Economic downturns, universal health coverage, and cancer mortality in high-income and middle-income countries, 1990-2010: a longitudinal analysis." *The Lancet*. 2016 Aug 13;388(10045):684-95. Epub 2016 May 25.
27. The ACTION Study Group. "Catastrophic health expenditure and 12-month mortality associated with cancer in Southeast Asia: results from a longitudinal study in eight countries." *BMC Medicine* (2015) 13:190. DOI 10.1186/s12916-015-0433-1.
28. Maruthappu M. "Economic downturns, universal health coverage, and cancer mortality in high-income and middle-income countries, 1990-2010: a longitudinal analysis." *The Lancet*. 2016 Aug 13;388(10045):684-95. Epub 2016 May 25.
29. Worldbank Open Data. World Development Indicators. Last accessed February 26, 2018. <https://data.worldbank.org/indicator/SH.XPD.OOPC.TO.ZS>
30. Worldbank Open Data. World Development Indicators. Last accessed February 26, 2018. <https://data.worldbank.org/indicator/SH.XPD.OOPC.TO.ZS>
31. Worldbank Open Data. World Development Indicators. Last accessed February 26, 2018. <https://data.worldbank.org/indicator/SH.XPD.OOPC.TO.ZS>
32. Website. Actuarial Society of Hong Kong. Presentation. "Hong Kong's Health System Service Model and Financing: Problems and way ahead." Last accessed February 26, 2018. <http://actuaries.org.hk/upload/File/LM060427.pdf>
33. Shijith VP and Sekher TV. "Who gets health insurance coverage in India?: New findings from nationwide surveys. 2013. XXVII IUSSP International Population Conference. Busan, Korea, Republic.
34. Chassat P et al. "Private Health Insurance in Southeast Asia." 2013. Roland Berger Strategy Consultants.
35. Chassat P et al. "Private Health Insurance in Southeast Asia." 2013. Roland Berger Strategy Consultants.
36. Chassat P et al. "Private Health Insurance in Southeast Asia." 2013. Roland Berger Strategy Consultants.
37. Web article. 15 July 2017. "The Good, the Bad, the Ugly of Integrated Shield Plans." <http://www.businesstimes.com.sg/brunch/the-good-the-bad-and-the-ugly-of-integrated-shield-plans>
38. Chassat P et al. "Private Health Insurance in Southeast Asia." 2013. Roland Berger Strategy Consultants.
39. Chassat P et al. "Private Health Insurance in Southeast Asia." 2013. Roland Berger Strategy Consultants.
40. World Bank. 2017. Tracking universal health coverage: 2017 global monitoring report (English). Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/640121513095868125/Tracking-universal-health-coverage-2017-global-monitoring-report>
41. World Bank Open Data. World Development Indicators. <https://data.worldbank.org/indicator/SH.XPD.PCAP?locations=OE-4E>
42. Solidiance, The USD 320 billion healthcare challenge in ASEAN, 2018. <https://www.solidiance.com/insights/healing/white-papers/the-usd-320-billion-healthcare-challenge-in-asean>
43. Web article. "World Bank Country and Lending Groups." Country classification. The World Bank. Last accessed on February 26, 2018. <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519>
44. Union for International Cancer Control (UICC). C/CAN City Cancer Challenge: Financing City Cancer Treatment Infrastructure Report. Dalberg. UICC. January 2017. <https://www.dalberg.com/system/files/2017-07/CCan2025.pdf>
45. Web article. "Universal coverage – three dimensions." Health financing for universal coverage. Last accessed on February 26, 2018. http://www.who.int/health_financing/strategy/dimensions/en/
46. World Bank Open Data. World Development Indicators. <https://data.worldbank.org/indicator/SH.XPD.PCAP>
47. Web article. "The rise of private health insurance in China." Ernest & Young LLP. Last accessed on February 23, 2018. [http://www.ey.com/Publication/vwLUAssets/EY-the-rise-of-private-health-insurance-in-china/\\$FILE/EY-the-rise-of-private-health-insurance-in-china.pdf](http://www.ey.com/Publication/vwLUAssets/EY-the-rise-of-private-health-insurance-in-china/$FILE/EY-the-rise-of-private-health-insurance-in-china.pdf)

48. Jing, T. & Shu, Y. "The Position and Development Status of Commercial Health Insurance in the Multi-level Medical Insurance Systems." *China Health Insurance*.
49. Web article. "Health Facts of Hong Kong, 2017 Edition." Department of Health. Last accessed on February 26, 2018. http://www.dh.gov.hk/english/statistics/statistics_hs/files/Health_Statistics_pamphlet_E.pdf
50. Web article. "Domestic Health Accounts." Food and Health Bureau, the Government of Hong Kong Special Administrative Region. Last accessed on March 12, 2018.
51. World Bank Open Data. World Development Indicators. <https://data.worldbank.org/indicator/SH.XPD.PCAP>
52. Web article. "India - Healthcare." The International Trade Administration, U.S. Department of Commerce. Last accessed on February 3, 2018. <https://www.export.gov/article?id=India-Healthcare-and-Medical-Equipment>
53. Web article. Medisave. Ministry of Health of Singapore. Last accessed on February 26, 2018. https://www.moh.gov.sg/content/moh_web/home/costs_and_financing/schemes_subsidies/medisave.html
54. Web article. "70% of the Indonesian Population Joins Universal Healthcare Program." *Indonesia Investments*. Last accessed on March 5, 2018. <https://www.indonesia-investments.com/news/todays-headlines/70-of-the-indonesian-population-joins-universal-healthcare-program/item8209>
55. Web article. "Why break a perfectly decent public healthcare system?" *Malaysiakini*. Last accessed on March 12, 2018. <https://www.malaysiakini.com/columns/363145#yJ11Tq5Z5IbpxwHY.99Website>. Actuarial Society of Hong Kong. Presentation. "Hong Kong's Health System Service Model and Financing: Problems and way ahead." Last accessed February 26, 2018. <http://actuaries.org.hk/upload/File/LM060427.pdf>
56. World Bank Open Data. World Development Indicators. <https://data.worldbank.org/indicator/SH.XPD.PCAP>
57. Chua H, Cheah J. Financing universal coverage in Malaysia: a case study. *BMC Public Health*. 2012; 12(Suppl 1): S7.
58. Rengaswamy, S. et al. "Managing the changing burden of cancer in Asia." *BMC Medicine*. 2014. 12:3.
59. World Bank Open Data. World Development Indicators. <https://data.worldbank.org/indicator/SH.XPD.PCAP>
60. Realeza MAP. "PhilHealth Updates NAPC-VDC on New Policies." PhilHealth official website. Last accessed on March 5, 2018. https://www.philhealth.gov.ph/news/2018/updates_napc.html
61. Rengaswamy, S. et al. "Managing the changing burden of cancer in Asia." *BMC Medicine*. 2014. 12:3.
62. World Bank Open Data. World Development Indicators. <https://data.worldbank.org/indicator/SH.XPD.PCAP>
63. Web article. "Chart of the Day: Two-thirds of Singapore's population covered by insurance programme." *Singapore Business Review*. Last accessed on February 15, 2018. <http://sbr.com.sg/healthcare/news/chart-day-two-thirds-singapores-population-covered-insurance-programme>
64. Rengaswamy, S. et al. "Managing the changing burden of cancer in Asia." *BMC Medicine*. 2014. 12:3.
65. World Bank Open Data. World Development Indicators. <https://data.worldbank.org/indicator/SH.XPD.PCAP>
66. World Health Organization. Regional Office for the Western Pacific. "The Kingdom of Thailand health system review." Manila : WHO Regional Office for the Western Pacific. Health systems in transition vol.5, no.5. ISBN: 9789290617136. <http://iris.wpro.who.int/handle/10665.1/11359>
67. Rengaswamy, S. et al. "Managing the changing burden of cancer in Asia." *BMC Medicine*. 2014. 12:3.
68. World Bank Open Data. World Development Indicators. <https://data.worldbank.org/indicator/SH.XPD.PCAP>
69. Tuplano RD. "Health coverage improves as Vietnam experiences demographic changes." *VIETNAMNET Bridge*. Last accessed on March 3, 2018. <http://english.vietnamnet.vn/fms/business/175296/health-coverage-improves-as-vietnam-experiences-demographic-changes.html>
70. Rengaswamy, S. et al. "Managing the changing burden of cancer in Asia." *BMC Medicine*. 2014. 12:3.
71. Web article. Philippine Charity Sweepstakes Office. Mandatory Contributions. Last accessed on on February 26, 2018. http://www.pcso.gov.ph/pages-services/mandatory_contributions.aspx
72. Web article. "'Sin Taxes" and Health Financing in the Philippines". Harvard Medical School, October 2015. Accessed on 24 April 2018 https://www.globalhealthdelivery.org/files/ghd/files/ghd-030_philippines_tobacco_control_teaching_case.pdf

73. Web article. Medisave. Ministry of Health of Singapore. Last accessed on February 26, 2018.
https://www.moh.gov.sg/content/moh_web/home/costs_and_financing/schemes_subsidies/medisave.html
74. Web article. "Individual Social Health Savings Accounts Can be Used to Purchase Private Insurance." NetEase Finance. Last accessed on February 26, 2018.
<http://money.163.com/17/0117/00/CAULTB4G002581PP.html>
75. Web article. "Canseq: towards the Elimination of Cervical Cancer." Canseq WeChat Subscription Account. Last accessed on February 26, 2018.
https://mp.weixin.qq.com/s/1XJjVhuKxQaivU_CsixELw
76. The I-8 Group. Leading Innovative Financing for Equity (L.I.F.E) Innovating financing for development. December 2009.
<http://www.un.org/esa/ffd/documents/InnovativeFinForDev.pdf>
77. Website. "Pink ribbon products." Estee Lauder Companies Breast Cancer Campaign. Last accessed on February 26, 2018.
<http://www.bcacampaign.com/pink-ribbon-products/>
78. Web article. "Medishield Life. About Integrated Shield Plans (IPs)" Ministry of Health of Singapore. . Last accessed on February 26, 2018.
https://www.moh.gov.sg/content/moh_web/medishield-life/integrated-shield-plans/about-integrated-shield-plans--ips-.html
79. Strategic direction paper. UNFPA 9th Country Programme Viet Nam. (2017-2021).
<http://vietnam.unfpa.org/sites/default/files/submissions/Viet%20Nam%20CP9%20Strategic%20Direction%20Paper.pdf>
80. Strategic direction paper. UNFPA 9th Country Programme Viet Nam. (2017-2021).
<http://vietnam.unfpa.org/sites/default/files/submissions/Viet%20Nam%20CP9%20Strategic%20Direction%20Paper.pdf>
81. Web article. "Fight against childhood cancer." Sanofi Espoir Foundation. Last accessed on February 26, 2018.
http://fondation-sanofi-espoir.com/en/ngo_child-matters.php
82. Web article. "Policy of the Colonrectal Cancer Insurance Plan of Zhong An Online P&C Insurance Co., Ltd." Last accessed on on January 5, 2018.
<https://open.zhongan.com/open/previewPdf.do?key=openweb/standardProduct/uploadFile/0bbfc44842a137b82e8c94101a46985f.pdf>
83. Web article. Program Introduction. Last accessed on February 26, 2018.
<http://trwy.meditrusthealth.com//view/financeApply.html>
84. Cardinal Health China. "Cardinal Health Introduced Instalment Payment Program for Cancer Drugs." Cardinal Health China WeChat Subscription Account. Last accessed on February 16, 2018.
<http://mp.weixin.qq.com/s/la3diRKcsWUcyadhSLPDw>
85. HER-2+ Development Impact Bond. Interview with Mr. Ankur Pegu from KIOS Invest.
<https://www.koisinvest.com/innovative-finance?lightbox=dataltm-jb3fcw6h>
86. Axa 360o Cancer Care. Axa Insurance Pte Ltd. brochure. Last accessed on on February 26,2018.
https://myaxa-singapore.cdn.axa-contento-118412.eu/myaxa-singapore%2Fc0fdd7b1-32e6-45e9-b483-a084ab069d23_cancer_care_brochure_english.pdf
87. ManuSilver Care. Manulife brochure. Last accessed on 25 April 2018
<https://www.manulife.com.hk/wps/wcm/connect/pws/ef68d5cf-c0d9-4afe-b520-65a1186c7e01/E1701054+ManuSilver.pdf?MOD=AJPERES>

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