

CANCER CARE AND ACCESS TO CANCER DRUGS IN ASIA-PACIFIC

Introduction



Thomas Hofmarcher
George Keel
Peter Lindgren



IHE Report
2021:3a

CANCER CARE AND ACCESS TO CANCER DRUGS IN ASIA-PACIFIC

Introduction of the main report “Cancer care and access to cancer drugs in Asia-Pacific”

Thomas Hofmarcher
George Keel
Peter Lindgren

IHE - The Swedish Institute for Health Economics

Please cite this report as:

Hofmarcher T, Keel G, Lindgren P. Cancer care and access to cancer drugs in Asia-Pacific. IHE Report 2021:3a. IHE: Lund, Sweden.

This report was commissioned and funded by Merck Sharp & Dohme (MSD) and based on research delivered by IHE. The views and opinions of the authors are not necessarily those of MSD.

IHE REPORT 2021:3a
e-ISSN: 1651-8187
ISSN: 1651-7628

The report can be downloaded from IHE's website.

Foreword

Cancer is one of the most intensely discussed health policy issues globally. The aging population in societies around the world leads to an increased disease burden caused by cancer, both to patients and to the health care system as a whole. At the same time, significant scientific advancements have been made in the diagnosis and treatment of cancer in recent decades. Lack of access to innovative diagnostic and treatment modalities remains a major challenge that needs to be addressed.

The Swedish Institute for Health Economics (IHE) has for many years now published regular updates on the burden of cancer and access to cancer drugs in Europe. This report expands IHE's expertise in this research area to Asia-Pacific. Covering almost half of the world population, Asia-Pacific is a diverse region consisting of high-income countries that strive to offer state-of-the-art health care to all its citizens and middle-income countries that still need to fully implement universal health coverage. Despite the different starting points, all countries face the challenge of achieving the best possible outcomes for patients given constrained health care resources.

This report builds on a comparative analysis of 14 countries and locations in Asia-Pacific. It intends to raise awareness on the size of the burden of cancer, the resources currently used to tackle the burden, the challenges faced by patients in accessing innovative treatment modalities, and possible ways to improve the status quo.

The present report is divided into several documents: The complete report (this document) and separate sub-reports consisting of the executive summary and the five main chapters in this report.

The report was funded by Merck Sharp & Dohme (MSD). Responsibility for the analysis, interpretations, and conclusions, as well as errors or omissions lies solely with the authors.

Lund, May 2021

Peter Lindgren

Managing Director, IHE

Acknowledgement

Nils Wilking (Karolinska Institutet) and Bengt Jönsson (Stockholm School of Economics) as well as Abeer Ahmad, Andreas Nilsson, and Klas Kellerborg (all IHE) provided research support for this report. Takamichi Kono and Lu Pei (both IQVIA) helped in interpreting sales data in the MIDAS database. Kathryn Chung and Seng Chuen Tan (both MSD) helped in organizing and managing work on this report and provided valuable feedback on earlier drafts of the report.

Three external experts provided feedback on early results of the analysis. We thank Isao Kamae (University of Tokyo), Zaheer Ud Din Babar (University of Huddersfield), and Michael Wonder (Wonder Drug Consulting) for sharing their thoughts and helping source additional material.

Table of contents

Foreword	2
Acknowledgement.....	3
Introduction	5
Geographic scope of the report	5
Content of the report	7
References	9

Introduction

Cancer is a growing challenge for health systems around the world. The global number of newly diagnosed cancer cases is expected to increase by almost 50%, from around 19 million cases in 2020 to 29 million cases in 2040 (1). Similarly, the number of cancer deaths is also expected to increase by 64% over 2020-2040, from around 10 to 16 million deaths (1). The increasing cancer burden is driven by demographic changes reflecting the growth and aging of population, along with changes in the prevalence of cancer risk factors (e.g., smoking, unhealthy diet, obesity, physical inactivity). According to the WHO, 30-50% of cancer cases are caused by known risk factors and the implementation of effective prevention measures (e.g., tobacco control) is key to address the increasing cancer burden (2).

Cancer patients have very different chances of survival depending on where in the world they live. For example, for patients diagnosed with lung cancer during 2010-2014, 5-year survival was 33% in Japan but only 4% in India. For breast cancer, 5-year survival was 90% in the USA but in the range of only 65-66% in other countries such as Malaysia and India (3). Trends in survival have been generally increasing for most cancer types in the past, owing to advancements in screening, diagnosis, and treatment (3). To ensure continued progress in patient outcomes in the leading countries and for other countries to catch up with these countries, additional investment in effective cancer control policies along the whole patient pathway are vital.

Geographic scope of the report

In this report, cancer care and access to cancer drugs in Asia-Pacific is described. 14 countries and locations, referred to as “markets” in the remainder of the report, are included in the analysis. They are grouped into two sets based on the classification system of the World Bank: 7 *high-income markets* (Australia, Hong Kong, Japan, New Zealand, Singapore, South Korea, Taiwan) and 7 *middle-income markets* (China, India, Indonesia, Malaysia, the Philippines, Thailand, Vietnam). Figure 1 shows the gross domestic product (GDP) per capita of the 14 markets, ranging from just over \$2,000 in India to \$65,000 in Singapore in 2019.

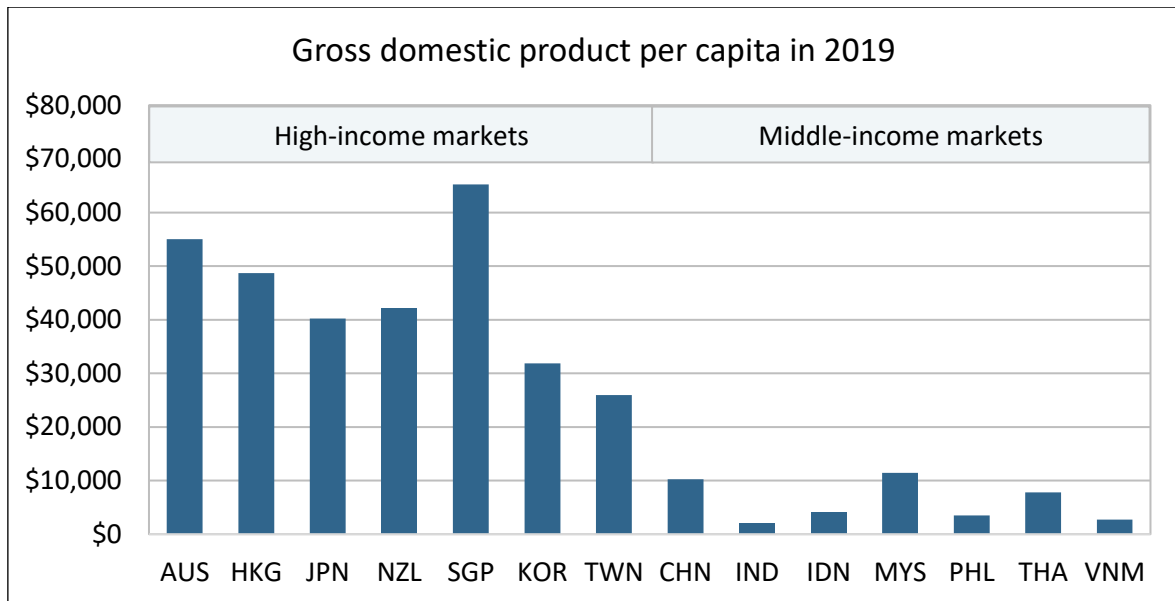


Figure 1: Gross domestic product (GDP) per capita in US\$ in Asia-Pacific, 2019

Notes: Numbers are in current prices and not adjusted for differences in purchasing power parity. Source: World Bank (4) and National Statistics Bureau (5).

The 14 markets in Asia-Pacific account for a sizable share of the world population and also of the world’s total GDP. Almost half (47%) of the world population resides in this region, most of them in middle-income markets; see Figure 2. China and India are the largest markets with almost 1.4 billion inhabitants each, while New Zealand is the smallest with 5 million inhabitants; see Table 1. Figure 2 shows also that around one third (34%) of the world’s economic wealth is created in Asia-Pacific, with high-income markets almost creating four times more wealth in relation to their population.

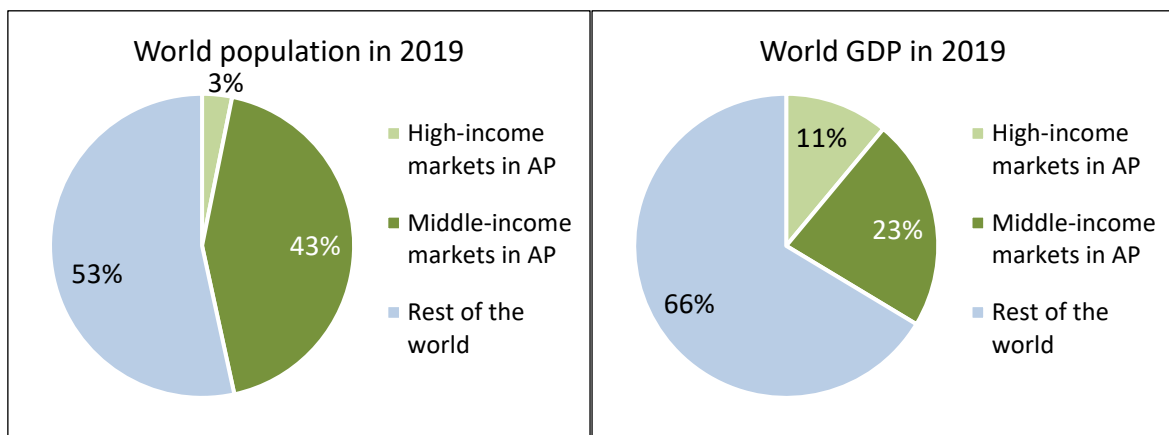


Figure 2: Total GDP and total population in high-income and middle-income markets in Asia-Pacific (AP) in comparison to the rest of the world, 2019

Notes: Numbers do not sum to 100% due to rounding. Source: World Bank (4), National Statistics Bureau (5) and Department of Household Registration (6).

Table 1: Total population in Asia-Pacific, 2019

High-income markets		Population in 2019 (million)	Middle-income markets		Population in 2019 (million)
AUS	Australia	25.4	CHN	China	1,397.7
HKG	Hong Kong	7.5	IND	India	1,366.4
JPN	Japan	126.3	IDN	Indonesia	270.6
NZL	New Zealand	4.9	MYS	Malaysia	31.9
SGP	Singapore	5.7	PHL	Philippines	108.1
KOR	South Korea	51.7	THA	Thailand	69.6
TWN	Taiwan	23.6	VNM	Vietnam	96.5

Source: World Bank (4) and Department of Household Registration (6).

Content of the report

The increasing burden of cancer is becoming a growing challenge throughout Asia-Pacific. Demands on health care are increasing not only because of a rising number of cancer patients but also because of growing expectations of patients to receive high-quality care. Significant progress in cancer research has led to a rapid inflow of new treatment options for cancer patients in recent years, in particular in the area of drug treatment. Advancements in both the cutting-edge science and treatment outcomes are changing the profile of cancer from a life-threatening to a chronic disease, transforming cancer care, and most importantly improving cancer patient survival.

New cancer treatment modalities are often considered to be costly and raise concerns about the budget impact and sustainability of health systems, especially in markets with deprived health care systems. However, the value of any new treatment modality is not only determined by its costs, but also by the benefits it offers to patients. Finding effective strategies to balance constrained health care budgets with access to innovative treatments with significant clinical benefits to patients is crucial for health policy makers.

This report aims to corroborate the developments described above with concrete numbers. As cancer is just the collective name of a group of over 100 diseases, the report puts greater focus on a handful of selected cancer types. Five cancer types – breast cancer, gastro-esophageal cancer, head and neck cancer, liver cancer, lung cancer – that are responsible for around half of all cancer cases across Asia-Pacific are considered.

The report is divided into five sub-reports, each answering a set of research questions:

1. The burden of cancer

- a. What is the size of the cancer burden in relation to other diseases?
- b. What is the trend in the cancer burden at the population level and at the individual level?
- c. What might be the size of the cancer burden in 2040?

2. Health spending on cancer care

- a. What is the level and proportion of health spending funded by public and private sources in general and what is known about the level of health spending on cancer?
- b. Is there an association between health spending and cancer patient outcomes?
- c. What is the proportion of households in financial catastrophe because of cancer?

3. Access to innovative cancer drugs

- a. What is the proportion of innovative cancer drugs in the national formulary?
- b. How long is the period from regulatory approval to reimbursement approval for innovative cancer drugs?
- c. How many patient life years could be saved by faster reimbursement approval of innovative cancer drugs?

4. Health spending on cancer drugs and unmet patient needs

- a. What is the level of total health spending on cancer drugs?
- b. What is the level of public health spending on innovative cancer drugs?
- c. Is health spending on cancer drugs sufficient to meet patient needs?

5. Pricing policies for off-patent cancer drugs

- a. What is the general price pattern of originator drugs before and after the availability of generics/biosimilars?
- b. How much expenditure could be saved if effective pricing mechanisms are applied to originator drugs after patent expiry?

References

1. Ferlay J, Laversanne M, Ervik M, Lam F, Colombet M, Mery L, et al. Global Cancer Observatory: Cancer Tomorrow. Available from: <https://gco.iarc.fr/tomorrow> [accessed Mar 19, 2021].
2. World Health Organization. Cancer. Available from: <https://www.who.int/news-room/fact-sheets/detail/cancer> [accessed Mar 2, 2021].
3. Allemani C, Matsuda T, Di Carlo V, Harewood R, Matz M, Niksic M, 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;391(10125):1023-75.
4. World Bank. World Development Indicators. Available from: <https://databank.worldbank.org/source/world-development-indicators#> [accessed Mar 19, 2021].
5. National Statistics Bureau. Latest indicators. Available from: <https://eng.stat.gov.tw/point.asp?index=1> [accessed Mar 19, 2021].
6. Department of Household Registration. Monthly Bulletin of Interior Statistics. Available from: https://www.moi.gov.tw/files/site_stuff/321/1/month/month_en.html [accessed Mar 19, 2021].

The Swedish Institute for Health Economics (IHE) was founded in 1979 to give researchers within the field of health economics, a broad platform to conduct their research from. IHE is a pioneer health economic research centre and has always been a central hub for health economic research.

As an independent research institute, working multidisciplinary with a broad array of public and private clients, IHE aims to contribute to sound decision-making in the health care setting by bridging the gap between academia, the life science sector and health care providers.

IHE has ongoing projects with clients around the globe, representing national authorities, pharmaceutical companies, healthcare providers, branch organisations, and patient interest groups. In addition, IHE is the organiser of a network of Swedish health economists with annual meetings since 2002. Other activities are the IHE Forum, the annual conference where all actors in the health care sector meet and discuss various topics of current interest in the health sector and educational activities and courses in health economics and health economic modelling.

IHE participates regularly in research collaborations, scientific congresses and meetings. Active participation at such events keeps us in touch with the international frontline of research and helps us identify current debates and work in the area.



The Swedish Institute for Health Economics
Institutet för Hälso- och Sjukvårdsekonomi
www.ihe.se