

Health Systems in Transition
Vol. 8 No. 1 2018

Japan Health System Review



Asia Pacific Observatory
on Health Systems and Policies

Japan Health System Review

Written by:

Haruka Sakamoto: Department of Global Health Policy, Graduate School of Medicine, The University of Tokyo

Md. Mizanur Rahman: Project Assistant Professor, Department of Global Health Policy, Graduate School of Medicine, The University of Tokyo

Shuhei Nomura: Assistant Professor, Department of Global Health Policy, Graduate School of Medicine, The University of Tokyo

Etsuji Okamoto: Professor, Department of Health & Welfare Management, The University of Fukuchiyama

Soichi Koike: Professor, Division of Health Policy and Management, Center for Community Medicine, Jichi Medical University

Hideo Yasunaga: Professor, Department of Clinical Epidemiology and Health Economics, School of Public Health, The University of Tokyo

Norito Kawakami: Professor and Chair, Department of Mental Health, School of Public Health, The University of Tokyo

Hideki Hashimoto: Professor, Health and Social Behavior, School of Public Health, The University of Tokyo

Naoki Kondo: Associate Professor, Department of Health Education and Health Sociology, School of Public Health, The University of Tokyo

Sarah Krull Abe: Assistant Professor, Department of Global Health Policy, Graduate School of Medicine, The University of Tokyo

Matthew Palmer: Department of Global Health Policy, Graduate School of Medicine, The University of Tokyo

Cyrus Ghaznavi: Visiting Researcher, Department of Global Health Policy, Graduate School of Medicine, The University of Tokyo

Edited by:

Kenji Shibuya: Professor and Chair, Department of Global Health Policy, Graduate School of Medicine, The University of Tokyo

Stuart Gilmour: Associate Professor, Department of Global Health Policy, Graduate School of Medicine, The University of Tokyo

Kozo Tatara: President, Japan Public Health Association

Asia Pacific Observatory on Health Systems and Policies

World Health Organization, Regional Office for South-East Asia.

Japan health system review.

Health systems in transition. Vol-8, Number-1

ISBN 978-92-9022-626-0

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Suggested citation Sakamoto H, Rahman M, Nomura S, Okamoto E, Koike S, Yasunaga H et al. Japan Health System Review. Vol. 8 No. 1. New Delhi: World Health Organization, Regional Office for South-East Asia, 2018.

Cataloguing-In-Publication (CIP) data. CIP data are available at <http://apps.who.int/iris/>.

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Printed in India

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Preface

The Health Systems in Transition (HiT) profiles are country-based reports that provide a detailed description of a health system, and of reform and policy initiatives in progress or under development in a specific country. Each profile is produced by country experts in collaboration with international editors. To facilitate comparisons between countries, the profiles are based on a template, which is revised periodically. The template provides detailed guidelines and specific questions, definitions and examples needed to compile a profile.

A HiT profile seeks to provide relevant information to support policymakers and analysis in the development of health systems. This can be used:

- to learn in detail about different approaches to the organization, financing and delivery of health services, and the role of the main actors in health systems;
- to describe the institutional framework, process, content and implementation of health-care reform programmes;
- to highlight challenges and areas that require more in-depth analysis;
- to provide a tool for the dissemination of information on health systems and the exchange of experiences between policy-makers and analysts in different countries implementing reform strategies; and
- to assist other researchers in more in-depth comparative health policy analysis.

Compiling the profiles poses a number of methodological issues. In many countries, there is relatively little information available on the health system and the impact of reforms. Due to the lack of a uniform data source, quantitative data on health services is based on a number of different sources, including the World Health Organization (WHO), national statistical offices, the Organisation for Economic Co-operation and Development (OECD) health data, the International Monetary Fund (IMF), the World Bank, and any other sources considered useful by the

authors. Data collection methods and definitions sometimes vary, but typically are consistent within each separate series.

The HiT profiles can be used to inform policy-makers about the experiences in other countries that may be relevant to their own national situation. They can also be used to inform comparative analyses of health systems. This series is an ongoing initiative, and the material will be updated at regular intervals.

Comments and suggestions for further development and improvement of the HiT series are most welcome and can be sent to the apobservatory@who.int. HiT profiles and HiT summaries for countries in Asia Pacific are available on the Observatory's website at www.healthobservatory.asia or http://www.searo.who.int/asia_pacific_observatory/en/.

Acknowledgements

The Health Systems in Transition (HiT) profile on Japan was written by Haruka Sakamoto, Md. Mizanur Rahman, Shuhei Nomura, Hideo Yasunaga, Norito Kawakami, Naoki Kondo, Hideki Hashimoto, Sarah Krull Abe, Matthew Palmer, Cyrus Ghaznavi (The University of Tokyo), Etsuji Okamoto (University of Fukuchiyama) and Soichi Koike (Jichi Medical University). It was edited by Kenji Shibuya, Stuart Gilmour (The University of Tokyo) and Kozo Tatara (Japan Public Health Association). Mikiko Kanda and Nima Asgari-Jirhandeh of the Asia Pacific Observatory on Health Systems and Policies (APO) Secretariat provided the overall support for the development of the profile.

The authors are grateful to the Ministry of Health, Labour and Welfare, the Ministry of Internal Affairs and Communications and the Ministry of Environment for their review and invaluable comments on previous drafts of the manuscripts. They also thank two independent peer-reviewers on behalf of the APO, Karen Eggleston (Stanford University, United States of America) and Naoki Ikegami (St Luke's University, Japan), for their valuable commentaries on the profile. Development of this profile was supported in part by a grant from the Ministry of Health, Labour and Welfare (H26-chikyukibo-ippa-001).

List of abbreviations

AMR	antimicrobial resistance
BCG	Bacillus Calmette–Guerin
CAM	complementary and alternative medicine
CHI	Community Health Insurance
CPR	cardiopulmonary resuscitation
CT	computerized tomography
DALY	disability-adjusted life year
DMAT	disaster medical assistance team
DPC	diagnosis–procedure combination
DPT-IPV	diphtheria–pertussis–tetanus and inactivated polio vaccine
DRG	diagnostic-related group
EHS	Elderly Health Systems
ELST	emergency life-saving technician
EMS	emergency medical service
FCSU	food (F), clothing (C), shelter (S) and utility (U) (approach)
FRSYO	Financial Redistribution System for the Young-Old
FY	financial year
GDP	gross domestic product
GPSP	General Principles for Suicide Prevention
HI	horizontal inequality
Hib	Haemophilus influenzae type b
HiT	Health Systems in Transition
HPV	human papillomavirus
HTA	health-care technology assessment
ICCS	Integrated Community Care System
ICD-10	International Statistical Classification of Diseases, 10th Revision
ICT	information and communication technology
IDF	International Diabetes Federation
IDSC	Infectious Disease Surveillance Center
IT	information technology

JCQHC	Japan Council for Quality Health Care
JHIA	Japan Health Insurance Association
JMA	Japan Medical Association
JNA	Japanese Nursing Association
JSTAR	Japanese Study of Ageing and Retirement
LDP	Liberal Democratic Party
LTC	long-term care
LTCI	long-term care insurance
MAFF	Ministry of Agriculture, Forestry and Fisheries
MAS	Mutual Aid Association
METI	Ministry of Economy, Trade and Industry
MEXT	Ministry of Education, Culture, Sports, Science and Technology
MHLW	Ministry of Health, Labour and Welfare
MHW	Ministry of Health and Welfare
MIC	Ministry of Internal Affairs and Communications
MMR	measles–mumps–rubella
MR	measles–rubella
MRI	magnetic resonance imaging
NCD	noncommunicable disease
NHCE	national health-care expenditure
NHI	National Health Insurance
OECD	Organisation for Economic Co-operation and Development
OHCA	out-of-hospital cardiac arrest
OOP	out-of-pocket
PPP	purchasing power parity
RBO	regional branch office (of the MHLW)
SCCE	Special Committee on Cost-Effectiveness
SHARE	Study of Health and Retirement in Europe
SHCSHG	specific health check-ups and specific health guidance
SMHI	Society-Managed Health Insurance
THE	total health-care expenditure
UHC	universal health coverage
VHI	voluntary health insurance
WAM	Welfare and Medical Service Agency
WHO	World Health Organization

Abstract

Since the 1960s, the universal health insurance system in Japan has provided comprehensive coverage to all Japanese citizens. Associating with economic growth, Japan has achieved numerous successes in health such as control and eradication of common infectious diseases, substantial decrease of transport accident death, and most famously, achieving the world's highest life expectancy.

However, negative population growth with low fertility rate coupled with an ageing population, shrinking economy and increasing unemployment pose critical structural challenges to Japanese health. In addition, tight control of health-care cost and a laissez-faire approach to service delivery has resulted in a mismatch between need and supply of health-care resources and reduction in accountability for care quality. Japan's economic slowdown, high life-expectancy and growing use of expensive technologies have led to an ever-increasing rate of health-care expenditure. Consequently, good quality of care with comparably low price is no longer available.

To counteract this, the government has adopted several reforms in the past two decades in service delivery and financing: *Long-term care insurance system (2000)*; *Integrated Community Care System (2006)*; *The Comprehensive Reform of Society Security and Tax (2010)*; and *Regional Healthcare Vision (2014)*.

Moreover, young Japanese health-care leaders have already proposed *Japan Vision: Health Care 2035*, which encourages a paradigm shift to the new system, with a goal to build a sustainable health-care system that delivers better health outcomes through care that is responsive and equitable to each member of the society and that contributes to prosperity in Japan and the world.

Executive summary

Japan, the world's third-largest economy, with a corresponding high standard of living, level of development, safety and stability, has made a large number of noticeable successes in health since its universal health insurance system was founded in 1961. This includes the full implementation of universal insurance coverage, achieving the world's highest life expectancy and control and eradication of common infectious diseases. In addition, transport accident deaths has decreased substantially in the past 50 years.

Despite these achievements, the country faces many challenges including a negative population growth with low fertility rate, an ageing population, shrinking economy and increasing unemployment rate. Increasing NCD-related disease burden and degenerative diseases especially in recent decades along with population ageing places a strain on the national health system in many aspects especially in terms of service delivery and financing.

Japan's health system is characterized by universal insurance scheme, where participants are free to choose health care facilities and good quality of care with comparably low price. However, Japan's policy of tight control of health-care cost and a laissez-faire approach to service delivery, with inadequate governance of provider organisations, created a mismatch between need and supply of health-care resources and impeded accountability for care quality. Japan's economic slowdown, high life expectancy, and growing use of expensive technologies have led to an ever-increasing rate of health-care expenditure (THE of % GDP: 6.3% in 1995 to 10.9% in 2015, by OECD). This demographic dilemma requires a drastic reform in health-care and long-term care systems.

Building on the robust implementation of universal health insurance system, several reforms have been adopted in the past two decades in order to meet the challenges posed by demographic changes.

Long-term care insurance system (2000): social insurance scheme for elderly aged 65 years and above who require long-term care or social

services. This is reviewed and revised every three years to maintain sustainability.

Integrated Community Care system (2006): a comprehensive system at the community level that integrates prevention, medical services, and long-term care and also provides living arrangements and social care.

The Comprehensive Reform of Social Security and tax (2010): a joint reform for the social security system and taxation system that should improve fiscal sustainability for the Japanese social security system in Japan. In seven years since its start, several related laws have successfully been enacted or amended under this reform plan and this plays the central policy for healthcare and long-term care. Priority areas are: measures for the support of children and child-raising, employment of young people, reform of medical and long-term care services, pension reform, measures against poverty and income inequality and measures for low-income earners as a cross-system issue.

Regional Healthcare Vision (2014): The Ministry of Health, Labour and Welfare has asked each prefectural government to create a region-specific vision, specifically requesting that prefectures estimate the future supply and demand for healthcare and create region-specific healthcare systems by 2025. Together with ICCS, this vision aims to provide seamless support for the elderly (from disease prevention to long-term care) in their respective communities.

Japan needs a paradigm shift to the new system as proposed in *Japan Vision: Health Care 2035*, a report for the Health Minister by young Japanese health leaders in June 2015 under the former Health Minister, Yasuhisa Shiozaki's leadership. The goal of *Japan Vision: Health Care 2035* is to build a sustainable health-care system that delivers better health outcomes through care that is responsive and equitable to each member of the society and that contributes to prosperity in Japan and the world. This report proposes that Japan's health system move from inputs to outcomes, from quantity to quality and efficiency, from cure to care, and from specialization to integrated approaches across all sectors.

1 Introduction

Chapter summary

Japan is the world's third-largest economy, with a correspondingly high standard of living, level of development, safety and stability. Japan is a constitutional monarchy with a parliamentary system of government. The country is divided into 47 prefectures that span a number of small archipelagos as well as the four main islands. Japan is a highly urbanized country and is host to one of the largest metropolises in the world, Tokyo. The country's 127 million population is ageing rapidly and shrinking due to low birth rates, increased life expectancy and its immigration policy. This has led to what some claim is an imminent demographic crisis (Tamiya N et al., 2011).

Since Japan's health system was founded in 1961, it has provided comprehensive coverage to all Japanese citizens. This can be largely attributed to the universal health insurance system. Thanks to the overall effectiveness of the health system, socio-economic development and advances in technology (Tamiya N et al., 2011), Japan has enjoyed increased life expectancy for many years. However, in recent decades, the incidence of noncommunicable and degenerative diseases has increased significantly. This increase, along with population ageing, has placed a strain on the national health system. Coupled with over two decades of economic slowdown, Japan must now find policies that balance universal insurance coverage, service quality and financial sustainability.

1.1 Geography and sociodemography

Japan is an archipelago set between the Sea of Japan to the west and the Pacific Ocean to the east. Japan shares no contiguous land borders with any other nation, but due to the large number of islands within its territory, it has an extensive maritime boundary. While Japan comprises over 6000 islands, a large majority of its population inhabits the four main islands: Honshu, Kyushu, Hokkaido and Shikoku (in descending order of population). Due to mountainous terrain, the land available for urban development is limited, resulting in high population density in

conurbations. Japan's geographic proximity to the Pacific rim makes the country particularly prone to seismic activity (i.e., earthquakes and tsunamis) and typhoons from the Pacific Ocean. Fig. 1.1 shows a map of the main islands of Japan.

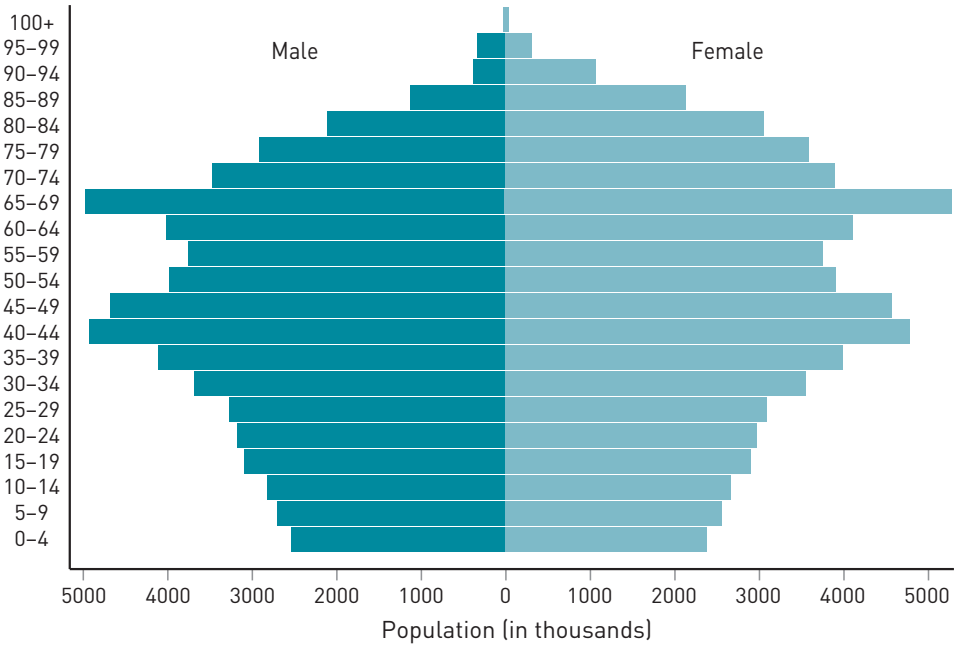
Fig. 1.1 Map of Japan



Source: United Nations Geospatial Information Section, 2014

Japan has passed through the epidemiological transition and is now ageing rapidly. Because of a sharp decline in Japan's fertility rate, the shape of the population pyramid no longer resembles the form of a classic population pyramid (Fig. 1.2). Two consecutive baby booms are represented by the two corresponding bulges, with the first one occurring shortly after the Second World War (1947–1949) and the second one in the early 1970s. It is evident that Japan has a large elderly population and will face an unprecedented ageing crisis when the first baby boomers reach the age of 75 years and older in 2025.

Fig. 1.2 Japan population pyramid in 2016



Source: Statistics Bureau, Ministry of Internal Affairs and Communications, 2017

The population in Japan increased steadily from 117 million in 1980 to 128 million in 2004. Although 2005 was the first year that the total population was below that of the previous year, it reached its peak in 2008. Since then, it fluctuated for a few years before beginning a steady decline from 2011 onwards (Table 1.1).

The proportion of the population aged 65 years and over overtook the proportion of those aged 0–14 in 1997, and was more than double said proportion by 2016; increasing from 9.1% in 1980 to 27.3% in 2016, while the proportion of the 0–14 year olds fell from 23.5% to 12.4% over the same time period. The number of those aged 65 years and above now stands at 34 million and peak in 2042 at 38.8 million; subsequently, it is estimated that the total number of the elderly will start to decline (Cabinet Office, Government of Japan, 2016). From 1980 onwards, total fertility rate was below the replacement level (2.0 children per woman). The crude birth rate has decreased steadily over time (from 13.6 per 1000 population in 1980 to 7.8 in 2016), while over the same period, there has been a consistent increase in life expectancy (Tamiya N et al., 2011). Among countries belonging to the Organisation for Economic Co-operation and Development (OECD), Japan has the lowest fertility rate with the highest mean maternal

age at first birth (Sleeboos J, 2003). The main reasons for the population decline in Japan are multifactorial, including an increase in irregular employment and corresponding lower wages, delayed marriage, an increasingly large unmarried population, changes in the home environment and social customs, an increasing number of women participating in the workforce, insufficient maternity and childcare leave for irregular workers, the rising costs of childbirth and child-rearing, and immigration policy (Jones GW, 2007; Morgan SP et al., 2006; Sleeboos J, 2003).

Table 1.1 Trends in demographic indicators, selected years

Indicators	1980	1990	2000	2010	2016
Population (in thousands) ^a	117 060	123 611	126 926	128 057	126 940
Female (% of total) ^a	50.8	50.9	51.1	51.3	51.4
Population (% of total) ^{a,b}					
0–14 years	23.5	18.2	14.6	13.1	12.4
65 years and older	9.1	12.1	17.3	22.8	27.3
80 years and older	1.4	2.4	3.8	6.4	8.2
Annual population growth rate (%) ^a	0.90	0.42	0.21	0.05	-0.17**
Population density (per sq. km) ^a	314	332	340	343	341
Mean age at first child ^a	26.4	27.0	28.0	29.9	30.7
Mean age at first marriage ^a					
Male	27.8	28.4	28.8	30.5	31.1
Female	25.2	25.9	27.0	28.8	29.4
Total fertility rate (per woman) ^a	1.75	1.54	1.36	1.39	1.44
Crude birth rate (per 1000 population) ^a	13.6	10.0	9.5	8.5	7.8
Crude death rate (per 1000 population) ^a	6.2	6.7	7.7	9.5	10.5
Age-dependency ratio [*]	48.4	43.5	47.0	56.8	65.8 ⁺
Urban population (%) ^c	76.2	77.3	78.6	90.5	93.5 ⁺⁺

Notes: *Age-dependency ratio is the ratio of population (age 0–14 and 65+)/[age 15–64], ** 2013, + 2014, ++ 2015

Sources: ^a Statistics Bureau Ministry of Internal Affairs and Communication, 2017, ^b World Bank, 2017, ^c United Nations Department of Economic and Social Affairs Population Division, 2017

The age-dependency ratio, the number of people who are less than 15 years old and above 65 years old divided by the working-age population (between 15 and 64 years), increased from 48.4 in 1980 to 65.8 in 2016. According to the World Urbanizations Prospects by the United Nations, urbanization is also taking place in Japan. In 1980, 76.2% of the population was categorized as urban, and by 2015, this number had increased to 93.5%. It is expected that the urban population will further increase to 97.7% by 2050, resulting in the disappearance of a large number of rural communities (United Nations, Department of Economic

and Social Affairs Population Division, 2017). Urbanization and population ageing have a substantial impact on the future of social and health systems in rural and underpopulated areas in Japan.

1.2 Economic context

Japan is the world's third-largest economy by gross domestic product (GDP) and is a member of the Group of Seven (G7). Although Japan's GDP increased rapidly in the immediate post-War period, the economic crisis of the 1990s caused several decades of stagnation and recession (Table 1.2). Industrial structure also changed significantly in the past decades. "Value added by services" was 70.0% of the GDP in 2015, representing a 4.2% rise from 2000 levels. However, the "value added by industry" fell by 3.8% of the GDP in the same period, as did agriculture, by 0.5% of GDP. This change in industrial structure is now affecting the sustainability of the Japanese universal insurance system (see more details in Chapter 3) (Ikegami N et al., 2011).

Historically, Japan has had low levels of unemployment. The unemployment rate had increased since 1990, peaking at 5.4% in 2002, and then resumed its decline to reach 3.4% in 2015 although the proportion of part-time and contingent workers has continued to grow in recent years. The majority of this increase can be attributed to the growth in the number of older people and women after childrearing, who had left the workforce and later returned to work (Reich MR et al., 2015). Increasingly, the inequality in working conditions and low wages for part-time and contingent workers have been seen as serious labour issues with social implications.

Equity has been a central tenet in Japan, and the government has promoted equity both in depth and breadth of public services. Gini coefficients quantifying income inequality have declined consistently from 1962 to 1981 (indicating that income was distributed more equally over this period) (Ministry of Health, Labour and Welfare, 2017t). However, in the decades after the 1980s, Japan's Gini coefficient increased (indicating higher levels of income disparity). In 2012, the Gini coefficient reached 0.33, which is higher than the OECD average (0.318) and is partially attributable to the increasing number of elderly persons (OECD, 2017b). Although Japan provides universal health insurance regardless of economic status with comparably lower premiums, an increasing number of children live below the poverty line, having reached 13.9% in 2015; these children's parents may not be able to afford even the lowest

premiums (Cabinet Office, Government of Japan, 2015a). Concerns regarding the impact of increasing inequality among children in access to and quality of health care due to poverty are ever present. In 2011, Ikegami et al. estimated that there were about 1.6 million people who were not covered by national health insurance. This was largely due to an increase in the proportion of those with irregular employment at lower wages (from 18% in 1988 to 34% in 2010) and is now of great political concern (Ikegami N et al., 2011).

At the centre of Japan's approach to healthcare has been the constitutionally enshrined objective of equity and universality, translated into practice by universal health-care access (Murray CJL, 2011). An extended economic recession has had an impact on the fiscal space allocated to the health-care system in Japan (Wada K et al., 2016). As social inequalities increase, the social determinants of health will likely become more entrenched, leading to overall poorer health of the population (World Health Organization, 2010). Ensuring long-term sustainability of the universal health coverage system in Japan is presently challenged by expanding inequity and the demographic transition.

Table 1.2 Macroeconomic indicators, selected years

Total population	1980	1990	2000	2010	2015
GDP (Billion Yen) ^a	249 345	454 645	526 706	500 354	530 545
GDP (US\$) ^a	1100	3140	4888	5700	4383
GDP per capita (1000 ¥) ^a	2135	3680	4152	3907	4173
GDP per capita, PPP (US\$) ^a	-	19 454	26 795	34 996	40 686
GDP average annual growth rate (%) ^a	2.8	5.6	2.8	4.2	1.2
Health expenditure, total (% of GDP) ^a	-	-	7.5	9.6	10.2**
Value added in industry (% of GDP) ^a	38.3	37.4	32.7	28.5	28.9
Value added in agriculture (% of GDP) ^a	3.0	2.1	1.5	1.1	1.1
Value added in services (% of GDP) ^a	58.6	60.6	65.8	70.4	70.0
Labour force (total) ^b ('000)	56 500	63 840	67 660	66 320	66 250
Unemployment, total (% of labour force) ^b	2.0	2.1	4.7	5.1	3.4
Real interest rate (%) ^a	2.8	4.5	3.5	3.6	-0.9
Gini coefficient ^c	0.318 (1981)	0.364	0.381 (1999)	0.379 (2011)	0.376 (2014)

Notes: The Gini coefficient is a measure of income inequality; higher figures indicate greater inequality among the population (Survey of the Redistribution of Income is conducted once every three years). **2014, ¥: yen; ¥B: billion ¥; PPP: purchasing power parity

Sources: ^aWorld Bank, 2017, ^bStatistics Bureau, Ministry of Internal Affairs and Communications, 2017, ^cMinistry of Health, Labour and Welfare, 2017t

1.3 Political context

Japan's journey towards the universal insurance system has been marked by eras of foundation, expansion and managed growth in a post-War nation. But seemingly, the path to universal insurance was illuminated by strong egalitarian principles. Comparatively, with reference to other countries at the same level of industrialization and wealth, it is not surprising that the universal insurance system could be achieved in Japan; however, what remains unusual is the breadth and depth of the health system that has been achieved.

Unique to the Japanese health system is the existence of both: Employees' Health Insurance plans and Community Health Insurance (CHI) plans, which are now classified as National Health Insurance. Employee's Health Insurance system has its origin in the Bismarckian system of social health insurance in Germany. Although Employees' Health Insurance and CHI have different origins, together they extended coverage to the entire population over time. CHI - which later became National Health Insurance (NHI), mainly covered self-employed and temporary workers.

The history of national insurance systems after the Second World War was marked by a movement towards attaining a higher level of care, in terms of health-care and welfare similar to that of Western nations. Even now, tensions among contending political parties, interest groups and public opinion on health care and health insurance have continued to influence political debate, especially during national elections.

1.3.1 *Foundation of the health insurance system*

The foundation of the Japanese health insurance system arose from an effort towards industrialization, in favour of progress. The most significant event in the history of the Employee's Health Insurance system was the enactment of the Health Insurance Act of 1922, which was promoted both by the government and industrial sectors to provide health insurance, in order to maintain the health of workers and prevent them from being attracted to socialism.

1.3.2 *Expansion*

By the middle of the 1930s, the majority of employees had access to health insurance, thanks to the Employees' Health Insurance system, while a very limited number of the unemployed had access to health care.

In 1938, the Central Government decided to create an insurance system that targeted the unemployed population so as to provide 100% insurance coverage to all Japanese residents. Responding to the threat of socialism from the Union of Soviet Socialist Republics, the government acted to extend coverage to both employed and unemployed populations nationally. Later, as the political agenda became more influenced by the military, the Ministry of Health and Welfare further expanded coverage with the main purpose of recruiting healthy soldiers during the early 1930s. However, CHI was offered on a voluntary basis and there were still many people who were not covered either by Employees' Health Insurance or CHI.

1.3.3 Growth and equity

When the Second World War ended in 1945, many social services, including health care, were destroyed, and the then-government was urged by GHQ (General Headquarters) operated in the USA to create social infrastructure. Subsequently, political conflict between the major parties resulted in the expansion of coverage to more vulnerable groups, as the Liberal Democratic Party (LDP) attempted to weaken the socialist and communist party agendas. Nobusuke Kishi, the LDP prime minister at that time, strongly believed that attaining equitable health care and a welfare system could be the driving force in making his cabinet sustainable. He expressed his intention to pursue universal insurance coverage in his speech at the Diet in 1957 and enacted the National Health Insurance Act (New) in 1958, which forced all municipalities to transform voluntary-basis Community Health Insurance to mandatory National Health Insurance. This law was enforced in 1959, and Japan officially achieved universal health insurance coverage in 1961.

During a period of almost 15 years of economic growth that started in the early 1960s with an unprecedented 10% growth rate (known as the economic miracle), the then LDP prime ministers Hayato Ikeda and Kakuei Tanaka expanded the breadth and depth of universal insurance coverage (initial co-payment rate started at 50% and was then reduced to 30% by the 1980s). At the same time, there was increasing pressure from the Socialist Party that urged a faster expansion of the coverage to the elderly, who were not receiving the full benefits of economic growth. Advocates highlighted the fact that because the elderly had lower income but more likely to experience illness, if their co-payment for accessing health system was kept the same, even if they access the system at the same rate, they would spend proportionally higher rate of their income on health care costs. The ruling LDP thus decided to provide free health care for the

elderly who were above the age of 70 years. This populist policy would later impose a heavy financial burden on the Japanese health system.

The recession of the 1973 oil crisis marked the end of the “economic miracle” and resulted in much slower economic growth. In a period of decreasing fiscal space and increasing health expenditures, tensions between the LDP and the Socialist Party were higher than ever. Although the Cabinet was sensitive to the increasing burden of health-care costs (mainly due to free health care for the elderly) and the need to reduce health-care expenditure, actions to contain health spending did not come until the late 1970s.

When the LDP won the national elections in the early 1980s, prime minister Yasuhiro Nakasone started an austere fiscal policy, also known as “small government.” At a time when global leaders like Margaret Thatcher from the United Kingdom and Ronald Reagan from the USA were promoting austere fiscal policy, the Japanese government started to reduce the health care budget primarily by abolishing free health care for the elderly and introducing a fee-control schedule (detailed explanation of healthcare for the elderly and the fee-schedule are explained in Chapter 3).

After a long period of austere fiscal policy for health, government actions were required to address inequities inherent to a system with a complex governance structure and with fragmented insurance plans with varying premium levels. In 2001, Junichiro Koizumi was elected as prime minister with a promise of a more progressive approach to health. However, poor macroeconomic performance and strong opposition from the Japan Medical Association (JMA) (mainly directed at strong austere fiscal policy on healthcare and the increase in both OOP and insurance premiums) limited such changes. The JMA's opposition, however, was weakened after Koizumi's overwhelming victory in the general election in 2005 (JMA made a significant blunder in the general election by taking an anti-Koizumi stance, although health care was not at stake). With the overwhelming majority, the Koizumi administration launched a fiscal policy in social security, in which the natural increase of the social security budget would be suppressed by 1.1 trillion yen in 5 years. Such an austere fiscal policy (the fee schedule for providers was decreased by 2.6% in 2006, the largest-ever price cut in its history) inevitably strained the health care setting and created “health care crisis”. Since then, the balance between

cost and quality of health care remains a central debate in Japan (more recent health-care reforms are explained in Chapters 6 and 7).

More recent laws and policies have aimed to consolidate insurance plans, promote community-level integration of health care, provide long-term care, encourage use of health data including ICT use in health care and settle controversies on highly priced drugs. In 2015, an advisory panel commissioned by the former health minister Yasuhisa Shiozaki presented its vision for health care in 2035. In this proposal, a reformed system will still promote egalitarian principles and at the same time underscore individual patient values; it clearly states that its goal is to provide a “sustainable health-care system that is responsive and equitable to each member of society.”

1.4 Health status

1.4.1 Life expectancy and mortality

Table 1.3 presents trends in life expectancy at birth as well as mortality rates from 1990 to 2015 in Japan. Life expectancy at birth increased between 1990 and 2015 by 4.0 years for men and 4.5 years for women, reaching 80.5 years and 86.8 years, respectively (Nomura S et al., 2017). However, regional disparities have widened during the same period. The gap between the highest and lowest life expectancy among prefectures increased from 2.5 years in 1990 to 3.1 years in 2015.

Table 1.3 Life expectancy at birth and health indicators by gender in 1990 and 2015

Indicators	1990	2015
Life expectancy (in years)		
Male	75.9	79.9
Female	81.8	86.3
Healthy life expectancy (in years)		
Male	68.2	71.5
Female	72.4	76.3
Age-standardized mortality rate*		
Male	759.3	539.0
Female	455.5	315.0

Notes: Death rates presented as per 100 000 population

*Age standardized death rates were derived from world population standards developed for the Global Burden of Disease Study (Wang H et al., 2016)

Source: Nomura S et al., 2017

Healthy life expectancy at birth, the average number of years that a newborn can expect to live in full health, rose from 70.4 years in 1990 to 73.9 years for both sexes in 2015. In 2015, healthy life expectancy was 71.5 years for men and 76.3 years for women. The gap between life expectancy at birth and healthy life expectancy at birth observed in 1990 has been static until 2015. All-cause age-standardized mortality rates for both sexes decreased by 29.0% between 1990 and 2015, falling from 584.1 deaths per 100 000 people in 1990 to 414.8 deaths per 100 000 people in 2015. Prefecture-level reductions in age-standardized mortality rates varied from 22.0% in Okinawa to 32.4% in Shiga between 1990 and 2015.

Table 1.4 Life expectancy (years), selected OECD countries, selected years

Life expectancy (years)	Year				
	1980	1990	2000	2010	2015
Canada	75.3	77.2	79.0	81.1	81.7*
Finland	73.6	75.0	77.7	80.2	81.6
France	74.3	77.0	79.2	81.8	82.4
Germany	72.9	75.3	78.2	80.5	80.7
Greece	75.3	77.1	78.6	80.7	81.1
Italy	74.0	77.1	79.9	82.1	82.6
Japan	76.1	78.9	81.2	82.9	83.9
Republic of Korea	66.2	71.7	76.0	80.2	82.1
Mexico	67.2	70.5	73.3	74.1	75.0
Switzerland	75.7	77.5	79.9	82.6	83.0
United Kingdom	73.2	75.7	77.9	80.6	81.0
United States of America	73.7	75.3	76.7	78.6	78.8

Note: *2013

Source: OECD, 2016

There have been significant improvements in life expectancy over the past 35 years in all OECD countries, as shown in Table 1.4. According to OECD data, of the 12 high-income OECD countries, Japan has the highest life expectancy at 83.7 years in 2015. This longevity compared to other OECD countries has been sustained over time. Among other OECD countries, Italy (82.7 years) has the second longest life expectancy followed by France (82.4 years) and Korea (82.3 years). The lowest life expectancy among OECD countries was observed in Mexico (76.7 years). The contributing factors to the relatively long life expectancy in Japan may be attributable to a healthy lifestyle, diets and other risk factor profiles,

sanitation and hygiene, universal and equitable health coverage and social determinants (Horiuchi S, 2011; Ikeda N et al., 2011).

1.4.2 Burden of diseases

Like many other high-income countries, non-communicable diseases (NCDs) are now the leading cause of mortality and morbidity in Japan, while the burden of communicable diseases has decreased substantially over the past five decades. TB was the top leading cause of death by the middle of the 20th century in Japan, although it drastically fell in the rankings over the same period (the number of deaths decreased from over 100 000 in 1950 to 1892 in 2016). Pneumonia was also one of the top causes of death in early the 1900s but has gradually decreased over the decades. However, mainly due to an ageing society, the number of deaths attributable to pneumonia resumed an increase in the 1990s and is now the third leading cause of death in Japan.

Table 1.5 shows the leading causes of death in Japan. Rankings are based on the number of deaths from each cause. The top three leading causes of death in 1990 were cerebrovascular disease, ischaemic heart disease, and lower respiratory infection, which remained at the top in 2015 despite substantial declines in their age-standardized rates (–19.3%, –11.6% and –6.5% between 2005 and 2015, respectively). The pace of decline in mortality from these three leading causes and many other causes has levelled off since 2005 for both men and women with the average annual percentage change in age-standardized death rates between 1990 and 2005 being –2.6%, –2.6%, and –1.2% for the top three causes, but declining to –1.9%, –1.2%, and –0.7%, respectively after 2005.

Table 1.5 Causes of death in Japan in 1990, 2005 and 2015 for both sexes

Leading causes in 1990	Leading causes in 2005	Change in age-standardized death rate from 1990 (%)	Leading causes in 2015	Change in age-standardized death rate from 2005 (%)
1 Cerebrovascular disease	1 Cerebrovascular disease	-39.6	1 Cerebrovascular disease	-19.3
2 Ischaemic heart disease	2 Ischaemic heart disease	-38.4	2 Ischaemic heart disease	-11.6
3 Lower respiratory infection	3 Lower respiratory infection	-17.5	3 Lower respiratory infection	-6.5
4 Stomach cancer	4 Alzheimer's disease	3.7	4 Alzheimer's disease	3.7
5 Alzheimer's disease	5 Lung cancer	2.8	5 Lung cancer	-8.7
6 Lung cancer	6 Stomach cancer	-33.9	6 Stomach cancer	-5.9
7 Colorectal cancer	7 Colorectal cancer	3.0	7 Colorectal cancer	-6.4
8 Liver cancer	8 Liver cancer	-9.5	8 Chronic kidney disease	-11.2
9 Self-harm	9 Self-harm	21.7	9 Liver cancer	4.1
10 COPD	10 Chronic kidney disease	-23.3	10 COPD	-16.0
11 Chronic kidney disease	11 COPD	-36.0	11 Pancreatic cancer	6.5
12 Road injuries	12 Pancreatic cancer	6.8	12 Self-harm	-2.3
13 Pancreatic cancer	13 Gallbladder cancer	-19.1	13 Gallbladder cancer	5.1
14 Gallbladder cancer	14 Aortic aneurysm	18.5	14 Aortic aneurysm	2.1
15 Hypertensive heart disease	15 Oesophageal cancer	-1.2	15 Other cardiovascular disease	-8.7
16 Cirrhosis/hepatitis C	16 Breast cancer	25.9	16 Interstitial lung disease	0.7
17 Diabetes	17 Other cardiovascular disease	5.2	17 Breast cancer	0.0
18 Oesophageal cancer	18 Cirrhosis hepatitis C	-31.8	18 Oesophageal cancer	-14.4
19 Other neoplasms	19 Road injuries	-45.0	19 Lymphoma	-6.6
20 Leukaemia	20 Interstitial lung disease	55.5	20 Other neoplasms	-18.8

Notes: The ranking is based on the number of deaths from each cause.

COPD: chronic obstructive pulmonary disease

Source: Nomura S et al., 2017

Many of the leading causes of death showed considerable variation by prefecture (Nomura S et al., 2017). For example, amongst the 47 prefectures, the lowest and highest age-standardized death rates due to cerebrovascular disease were 37.9 and 62.0 per 100 000 population, respectively. For ischaemic heart disease, there was a 1.5-fold difference between the prefectures with the lowest and highest age-standardized death rates (35.9 and 55.0 per 100 000 population, respectively). Cerebrovascular disease has a 1.6-fold difference between the prefectures with the lowest and highest age-standardized death rates (37.9 and 62.0 per 100 000 population respectively). Some causes have distinct patterns determined largely by geography (higher in the rates in the north, lower in the central and south) while others do not.

Between 1990 and 2015, the rate of age-standardized disability-adjusted life years (DALYs) decreased by 19.8% overall. Table 1.6 provides the trends in cause-specific DALYs from 1990 to 2015. Cerebrovascular disease and ischaemic heart disease are now at similar levels in Japan. As with mortality, the pace of reduction in DALYs due to these causes largely levelled off since 2005. The average yearly percentage change in age-standardized DALY rates was -2.6% for both ischaemic heart disease and cerebrovascular disease from 1990 to 2005, which decreased to -1.5% and -2.1% after 2005, respectively. With no significant change in age-standardized DALY rates since 2005, low back and neck pain, sense organ diseases, and depressive disorders have been important leading causes of DALYs in 2015. Although they do not cause substantial death, they result in major disabilities.

Like many causes of death, causes of DALYs showed substantial variation between prefectures, which largely followed patterns determined by geography. In terms of disparity, between the prefectures with the lowest and highest DALY rates in 2015, there was a 1.7-fold and 1.8-fold difference for ischaemic heart disease and cerebrovascular disease, respectively. Many disabling conditions that predominantly lead to DALYs but do not cause a substantial number of deaths, such as low back and neck pain, and sense organ diseases, revealed no distinct geographical pattern.

Table 1.6 Causes of DALYs in Japan in 1990, 2005 and 2015 for both sexes combined

Leading causes in 1990	Leading causes in 2005	Change in age-standardized DALYs rate 1990–2005 (%)	Leading causes in 2015	Change in age-standardized DALYs rate 2005–2015 (%)
1 Cerebrovascular disease	1 Cerebrovascular disease	-38.2	1 Ischaemic heart disease	-14.5
2 Ischaemic heart disease	2 Low back & neck pain	0.3	2 Low back & neck pain	-0.1
3 Low back & neck pain	3 Ischaemic heart disease	-33.8	3 Sense organ diseases	0.8
4 Sense organ diseases	4 Sense organ diseases	1.3	4 Cerebrovascular disease	-21.4
5 Stomach cancer	5 Self-harm	34.0	5 Alzheimer's disease	3.3
6 Lower respiratory infections	6 Lower respiratory infections	-23.8	6 Lower respiratory infections	-10.8
7 Self-harm	7 Lung cancer	-1.0	7 Lung cancer	-11.1
8 Skin diseases	8 Alzheimer's disease	-2.2	8 Self-harm	-5.3
9 Depressive disorders	9 Stomach cancer	-38.0	9 Stomach cancer	-20.6
10 Road injuries	10 Skin diseases	0.6	10 Colorectal cancer	-6.4
11 Lung cancer	11 Depressive disorders	-1.9	11 Depressive disorders	0.7
12 Diabetes	12 Colorectal cancer	-0.9	12 Skin diseases	0.1
13 Migraine	13 Diabetes	-29.0	13 Chronic kidney disease	-4.8
14 Colorectal cancer	14 Liver cancer	-21.2	14 Diabetes	-9.0
15 Liver cancer	15 Falls	-6.0	15 Liver cancer	-18.1
16 Chronic kidney disease	16 Chronic kidney disease	-19.5	16 Oral disorders	-0.3
17 Alzheimer's disease	17 Migraine	-0.8	17 Falls	-19.0
18 Falls	18 Oral disorders	1.2	18 Other musculoskeletal disease	1.9
19 Asthma	19 Other musculoskeletal disease	-14.3	19 Migraine	1.0
20 Other musculoskeletal disease	20 COPD	-29.0	20 COPD	-11.4

Notes: The ranking is based on the number of DALYs from each cause.

COPD: chronic obstructive pulmonary disease; DALY: disability-adjusted life year

Source: Nomura S et al., 2017

According to Nomura et al. (2017), 47.1% of total deaths in 2015 were attributable to identified risk factors: behavioural risk factors accounted for 33.7% of total deaths, metabolic risks factors for 24.5%, and environmental and occupational risks factors for 6.7% (Nomura S et al., 2017). Similarly, all identified risk factors jointly explained 34.5% of DALYs, with the remaining 65.6% DALYs as yet unexplained. Behavioural risk factors contributed to more DALYs in 2015 (25.2%) than metabolic (16.4%) or environmental and occupational risks factors (4.4%).

In 2015, smoking was the leading risk factor for mortality among men (18.9%), while dietary risk factors were the major contributors to the total deaths for both men (18.8%, second rank) and women (18.0%, first rank). Dietary risks factors were the leading cause of DALYs both in men (13.8%) and women (9.3%) in 2015, of which high sodium consumption was at the top for both men and women (men 4.4%, women 3.0%). Tobacco smoking was the second leading risk factor for men (12.5%). A number of metabolic risk factors, such as high blood pressure and high fasting plasma glucose, were among the five leading risk factors for DALYs in both men and women. The contributions of these risk factors to death and DALYs did not vary much across prefectures in 2015.

1.4.3 Health behaviour

Diabetes and hypertension

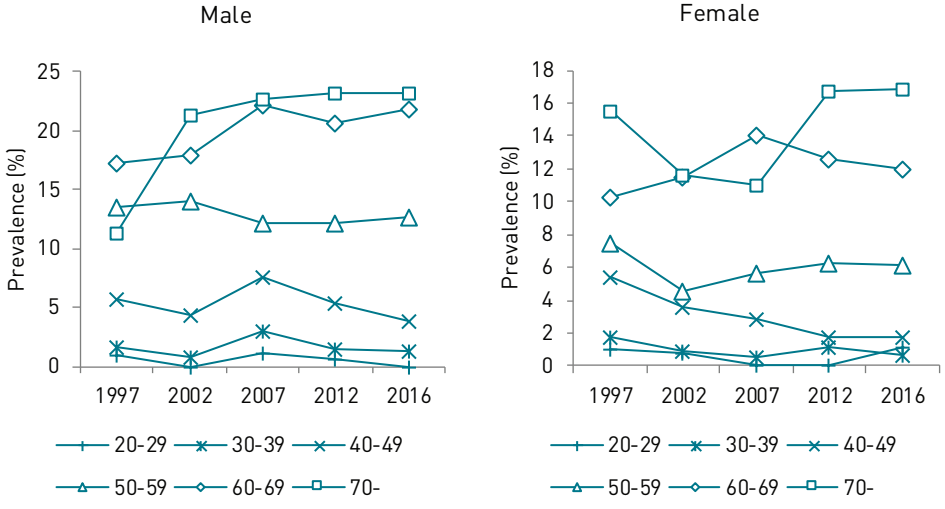
Diabetes and hypertension are the two major chronic diseases in Japan, although they have become a major public health concern among all OECD countries. The age-standardized prevalence of diabetes¹ was 12.1% (16.3% for men and 9.3% for women in 2016) (Ministry of Health, Labour and Welfare, 2016o).

Hypertension (defined as systolic blood pressure \geq 140mmHg) is another major chronic disease, acknowledged as one of the established risk factors for stroke and cardiovascular diseases in Japan. The prevalence of hypertension in Japan is among the highest in OECD countries, at 34.6% for men and 24.8% for women in 2016 (Table 1.7) (Ministry of Health, Labour and Welfare, 2016o). Salt intake has been identified as a major risk factor for hypertension in Japan, and as such, lowering sodium intake is strongly recommended to address this health trend. Public health programmes to promote salt reduction and primary care management

1 Definition: Hb1Ac is over 6.5% (NGSP) or currently under treatment

of high blood pressure with anti-hypertensives have been credited with significant reductions in hypertension in Japan (Ikeda N et al., 2011).

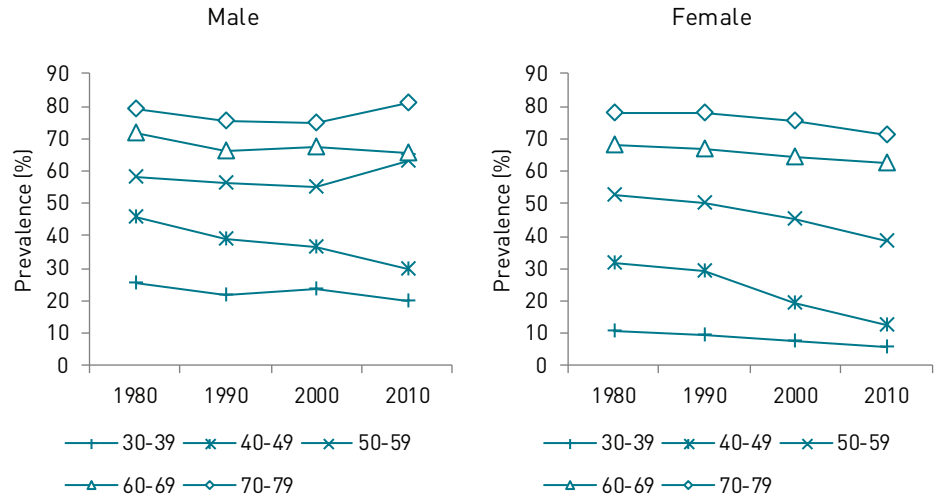
Fig. 1.3 Age- and sex-specific prevalence of diabetes in Japan, 1997-2016



Notes: Definition of diabetes is Hb1Ac is over 6.1% (JDS: Japan Diabetes Society) or currently under treatment for the data between 1997 and 2012, and Hb1Ac is over 6.5% (NGSP: National Glycohemoglobin Standardization Program) or currently under treatment for the data in 2016.

Source: Ministry of Health, Labour and Welfare, 2002, 2017k

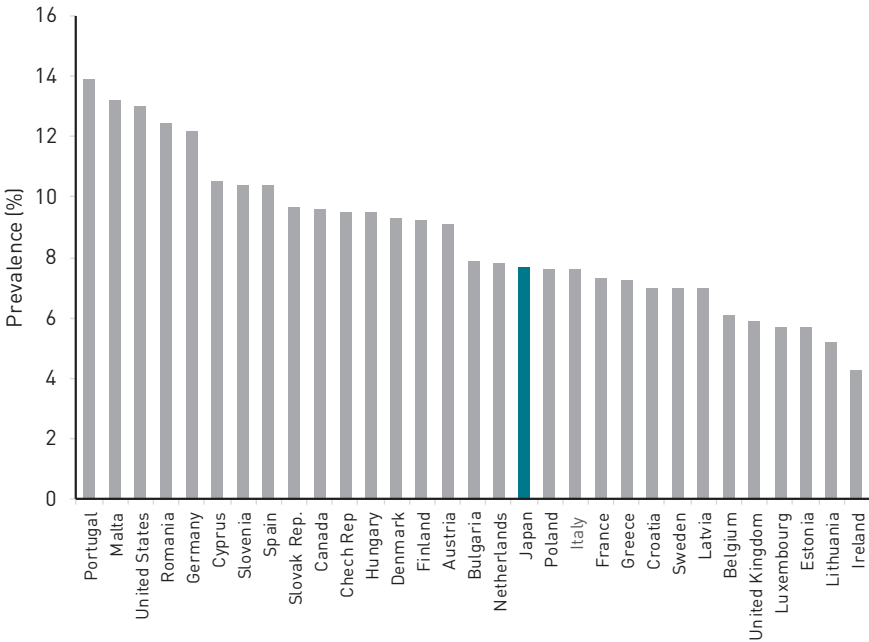
Fig. 1.4 Age- and sex-specific prevalence of hypertension in Japan, 1980-2010



Source: Miura K et al., 2013

Fig. 1.3 and 1.4 show the time trends in age- and sex-specific prevalence of diabetes and hypertension, respectively. The prevalence of diabetes appears to remain stable over the years in all age categories, except for the 70–79 age group in both sexes and for 60–69 age group in men. Among this group, an increasing trend in diabetes prevalence can be observed. The age-specific prevalence of hypertension appears to remain unchanged or shows a decreasing trend over time, the exception being in men aged between 50–59 and 70–79 years old from 2000 onwards. Due to this increasing prevalence, further monitoring is needed for men aged 50 years and older.

Fig. 1.5 Estimated prevalence of diabetes, adults aged 20–79 years in 2015



Source: International Diabetes Federation, 2017

According to a recent report from the International Diabetes Federation (IDF), Japan has an intermediate rate of diabetes (5.7%) prevalence when compared to other countries (although this figure is different than the value of 12.1% reported by the National Health and Nutrition Survey, probably due to IDF’s data quality or differing methodologies). Fig. 1.5 shows the prevalence of diabetes among OECD countries. The highest prevalence of diabetes, 13.9% was in Portugal while the lowest prevalence, 4.3% was in Ireland

Body mass index

In 2013, the prevalence of obesity, measured as a body mass index of 30 kg/m² or more was only 4.5% for men and 3.3% for women in Japan. The prevalence of obesity was relatively constant for women over time. For men, an increase was observed from 1.5% to 4.5% between 1980 and 2013, which is probably due to low physical inactivity and changes in dietary habits (Yoshiike N, 2003).

Table 1.7 summarizes the trends in the prevalence of people with a body mass index of 25 kg/m² or more. In 2016, this prevalence stood at 31.1% for men and 19.0% for women. While the proportion of obese women remains largely constant over time, it increased rapidly in men from 11.0% to 31.1% between 1980 and 2016 although the prevalence is still much lower than in other developed countries.

Table 1.7 Body mass index (≥ 25 kg/m²) in adults aged 20 years and older, Japan, 1980–2016

Age-standardized obesity	Percentage (%)					
	1980	1990	2000	2010	2013	2016
Male	11.0	13.7	26.8	29.9	28.4	31.1
Female	22.8	17.7	21.3	19.5	18.8	19.0

Notes: Cut-off point for obesity ≥ 25 kg/m² (subcutaneous fat ≥ 40 mm for men, ≥ 50 mm for women in 1990)²

*Age 50–59 for 1980

Source: Ministry of Health, Labour and Welfare, 2016o; National Institute of Health and Nutrition, 2018

Tobacco consumption

Compared to other OECD countries, Japan has made limited progress in reducing tobacco consumption over the past few decades, and it remains a leading cause of premature death. Looking ahead to the 2020 Olympic and Paralympic games in Tokyo, the MHLW attempted to pass legislation on second-hand smoking in 2017 (prohibition of indoor smoking in restaurants and bars (larger than 30 m²)); however, this bill faced fierce opposition from pro-tobacco lawmakers (mainly members of the Tobacco Caucus of the Liberal Democratic Party), the restaurant industry, and Japan Tobacco (JT), the world's third largest tobacco company.

2 WHO defines obesity as BMI ≥ 30 kg/m² and overweight as ≥ 25 kg/m² (<http://www.who.int/mediacentre/factsheets/fs311/en/>). However, because of low prevalence of obesity and overweight in Japan, the MHLW set cut off point for obesity as BMI ≥ 25 kg/m².

Although Japan is ranked very low in terms of tobacco control by the World Health Organization (WHO), there has been no new movement to enact the second-hand smoking law. Currently, the Tokyo Metropolitan government, the host city of the 2020 Tokyo Olympic and Paralympic games, is proposing regulations which, by 2019, would prohibit indoor smoking at all restaurants in Tokyo. The trend in tobacco use in Japan is shown in Table 1.8.

Table 1.8 Proportion of Japanese adults who are daily smokers, 1980–2015

Smoking (ages ≥ 15 years who are daily smokers)	Percentage (%)			
	1990	2000	2010	2015
Male	53.1	47.4	32.2	31.4
Female	9.4	11.5	8.4	8.3

Note: Age not adjusted for the data 1990 and 2000, and age adjusted for 2010 and 2015.

Source: Ministry of Health, Labour and Welfare, 2017k

The prevalence of smoking in Japan has dropped by more than 50% since 1980. Around 30% of male adults in Japan now smoke daily, down from over 70% in 1980. Japanese men smoke almost 3.8 times as much daily compared to women. Effective policies for tobacco control are needed in Japan in light of tobacco control ordinances consistent with the Framework Convention on Tobacco Control (Shibuya K et al., 2003). Japan is on the verge of choosing one of two paths: (1) improving the population health through a strict smoke-free policy that has already become the gold standard in many other countries and (2) keeping JT and tobacco industries appeased through less-restrictive policies at the price of lives lost from passive smoking (Tsugawa Y et al., 2017).

1.4.4 Maternal and child health indicators

There were approximately 1 000 000 births in Japan in 2015. In 2014, 9.6% of newborns were considered to be of low birth weight, a trend that has been increasing over recent decades. Since the 1970s, Japan has enjoyed very low mortality rates for both mothers and their children. Infant mortality reached a record low in 2015, with 2.0 deaths per 1000 live births. This decrease was mirrored in all measures, including neonatal, perinatal and under-five mortality rates. Likewise, the maternal mortality ratio (risk associated with each pregnancy) was reduced by more than half between 1990 and 2015.

Table 1.9 Maternal, child and adolescent health indicators, selected years

Selected health indicator	1980	1990	2000	2010	2015
Adolescent fertility rate	4.0	4.0	5.2	4.8	4.0
Neonatal mortality rate	4.9	2.5	1.8	1.1	0.9
Infant mortality rate	7.4	4.6	3.3	2.4	2.0
Under-five mortality rate	9.9	6.3	4.5	3.2	3.0
Maternal mortality ratio	-	14.0	10.0	6.0	5.0
Measles immunization	69.0	73.0	96.0	94.0	96.0
Low-birth-weight babies (% of live births)	-	-	8.0	-	9.6*

Notes: Adolescent fertility rate: birth per 1000 women ages 15–19 years; mortality represents deaths per 1000 live births for infants and 100 000 live births for mothers; measles immunization for % of children aged 12–23 months

* 2012

Source: World Bank, 2018

Table 1.9 summarizes the maternal, child and adolescent health indicators in Japan. Adolescent fertility rates rose slowly for the period up until 2000, and decreased to 4.0 per 1000 in 2015. Immunization rates in Japan are high and comprehensive coverage has been achieved for some years now, with the exception of measles, for which coverage fell to 73% in the 1990s due to fears surrounding the measles–mumps–rubella (MMR) vaccine. This drop proved to be temporary: as of 2015, 96% of children aged 12–23 months have been immunized.

1.5 Natural and human-induced disasters

Disasters are a major threat to population health, both in the acute response and the long-term recovery phases. The devastating magnitude 9.0 Great East Japan Earthquake struck north-eastern Japan on 11 March 2011 and killed more than 16 000 people. Coupled with the subsequent tsunami and Fukushima Daiichi Nuclear Power Plant Accident, this triple-disaster caused massive destruction of local health-care facilities. However, despite the damage to infrastructure, health-care administrative information was well maintained under the universal health insurance system, which, along with temporary co-payment exemptions, allowed for continuity in health-care access for people in many affected areas (Tanihara S et al., 2013). While there is growing evidence that major disasters contribute to the development of cardiovascular disease (CVD), several studies from the areas most

seriously affected by the triple-disaster in Japan demonstrated only slight or no obvious increase in CVD risk post-disaster (Gilmour S et al., 2015; Toda H et al., 2017). These experiences demonstrate that a strong universal health-care system supports robustness and resilience during public health emergencies in Japan.

1.6 Conclusion

In the past five decades, Japan has achieved a large number of health successes. These include the full implementation of universal insurance coverage, cultivating the world's highest healthy life expectancy, and the control and even eradication of common infectious diseases. In addition, alcohol consumption and transport accident deaths have decreased substantially over the past 50 years. Despite these achievements, the country faces many structural challenges, including negative population growth, an ageing population, low fertility, a shrinking economy, increasing unemployment, and an increasing NCD-related disease burden. In addition, although the overall life expectancy and healthy life expectancy have been increasing in Japan, there are increasing disparities among prefectures, demonstrating a need for region-specific health policies.

Japan has successfully reduced the disease burden from NCDs during the past decades; however, the pace of reduction has stagnated since around 2005. Although many NCDs are preventable and are linked to lifestyle and dietary patterns, challenges still remain, especially for tobacco control. Additionally, there are no effective preventive or curative measures for Alzheimer's disease so far, and the number of cases is only expected to increase; further efforts (i.e., effective policies to support patients in the community and R&D directed at new medicines for Alzheimer's disease) are required. There is an urgent need to scale up effective coverage of preventive and public health interventions so as to further reduce the disease burden from NCDs.

2 Organization and governance

Chapter summary

The Ministry of Health, Labour and Welfare (MHLW) is the central leading organization in the Japanese health care system. Japan's health care system is characterized by excellent health outcomes at a relatively low cost; the system emphasizes equity, facilitated by universal insurance coverage through social insurance premiums and tax subsidies, with virtually free access to health-care facilities. The country's population is rapidly ageing and Japan needs to transform its health care system into one that prioritizes patient value, quality and efficiency of care, and integrated approaches across sectors.

The MHLW as Japan's leading organization, actively collaborates and cooperates with various other bodies such as the Cabinet, several other ministries and professional organizations. Traditionally, the Ministry of Finance (MOF), the Ministry of Education, Culture, Sports, Science and Technology (MEXT), and the Ministry of Agriculture, Forestry and Fisheries (MAFF) are involved in financing (in particular, the fee schedule and drug pricing), medical professional education, food security and one health, among others. Recently, the Cabinet Office and the Ministry of Economy, Trade and Industry (METI) have become more involved in health care and the medical industry. In 2013, the Central Government published the Japan Revitalization Strategy, in which health care was determined to be one of the top driving forces for revitalizing the Japanese economy (Prime Minister of Japan and His Cabinet, 2013). Under this strategy, Medical Excellence Japan (MEJ) was established under the support of the MEXT in order to promote and expand Japanese health-care services. Additionally, at the G7 Ise-shima summit in 2016, health – with a strong focus on health security – was one of the main agenda items on which the Cabinet Office, MHLW, MOF and Ministry of Foreign Affairs (MOFA) worked together closely.

The government regulates and controls nearly all aspects of the health system at three levels: national, prefectural, and municipal, where service delivery and implementation are mainly handled by prefectural

and municipal governments. Several professional organizations such as the JMA and the Japanese Nursing Association (JNA) are also actively involved in health policy processes. The manner in which the MHLW interacts with these professional organizations, including the private sector, care providers and patients, is notably complex.

2.1 Overview of the health system

Japan's health system is distinctly characterized by universal health insurance, which provides excellent health outcomes at a relatively low cost with equity (Ikegami N et al., 2011; Murray CJL, 2011). By law, all residents of Japan (including foreign nationals with a residence card) must be enrolled in a health insurance programme.

There are two main types of health insurance in Japan – the Employees' Health Insurance System and National Health Insurance (NHI) (previously called Community Health Insurance). The Employees' Health Insurance System is provided to employed workers (company employees) and their dependents, while NHI is designed for self and unemployed people (hence those not eligible to be members of Employees' Health Insurance) and is run by municipal governments (i.e., cities, towns and villages).

Patients' co-payments for medical expenses must be paid at every visit to clinics and hospitals. The nationally uniform fee schedule (i.e., amount of reimbursement, including the patients' co-payment) covers most health-care procedures and products, including drugs. The health insurance pays 70–90% of the cost while the remainder is paid by the insured as co-payment. The co-payment rate as of March 2017 is as follows: pre-elementary school³ = 20%; elementary school up to age 69 years = 30%; age 70–75 years = 20%; and age 75 years or above = 10% (see more details in Chapter 3) (Ishii M, 2012).

2.2 Historical background

The two health insurance schemes in Japan – Employees' Health Insurance system and NHI have different histories. As summarized in Chapter 1.3, the Employees' Health Insurance System started in 1922 for employed workers, while the CHI system, which was later renamed "NHI," was designed and enacted in 1938 for self-employed workers (such as farmers, fishermen, and informal employees) (Hatanaka T et al., 2015).

3 Pre-school in Japan starts at 1 year of age and ends at 6 years of age.

Participation in these two insurance schemes was voluntary, so a substantial number of individuals were not covered under either Employees' Health Insurance or NHI.

In the aftermath of the Second World War, the growth of democratic movements and a commitment to social solidarity gave rise to the impetus to achieve universal insurance. After a transition from voluntary to mandatory enrolment in the NHI system, together with the expansion of coverage of the Employees' Health Insurance System, a universal health insurance system was established in 1961 (although the service coverage was limited and out-of-pocket (OOP) was still high at 50%) (Ikegami N et al., 2011).

Thanks to the economic boom after the Second World War, the government successfully expanded its service coverage and reduced the OOP payment rate from 50% to 30%. Moreover, the government introduced a monthly and an annual cap on the OOP payment for individuals and households (see more details in Section 3.4.1) as well as free medical services for the elderly in 1973. Although the latter ended in 1982 due to economic stagnation, this framework has remained the foundation for the health-care system for the elderly (see more details in Chapter 3).

2.3 Organization

2.3.1 Central Government

The MHLW plays a central role in the health-care system of Japan. Originally, it was composed of two different ministries – the Ministry of Health and Welfare, and the Ministry of Labour. These ministries merged in 2001 as part of an administrative government reform plan. Fig. 2.1 shows the administrative structure of the MHLW. The main bureaus involved in population health and health care are Health Policy, Health Service, Pharmaceutical Safety and Environmental Health, Labour Standards, Social Welfare and War Victims' Relief, Health and Welfare for the Elderly, Health Insurance and Pension.

Fig. 2.1 Organization chart of the Japanese Ministry of Health, Labour and Welfare



Source: Ministry of Health, Labour and Welfare, 2017]

The Health Policy Bureau is responsible for the administrative and strategic management of the health care system, including health economy, research and development, and information. The Health Services Bureau plans and supervises the prevention of lifestyle-related diseases, cancer and infectious diseases, coordinates organ transplantation and regulates the promotion of environmental health. The Pharmaceutical Safety and Environmental Health Bureau directs the safety of pharmaceutical products, foods, chemical substances and medical devices, promotes the provision of safe blood products and orchestrates anti-drug abuse campaigns.

The Labour Standards Bureau is responsible for the safety and sanitation of factories and providing compensation for labour-related injuries. The Social Welfare and War Victims' Relief Bureau is in charge of welfare services for indigent people, community welfare, welfare for disabled persons and war victims' relief. The Health and Welfare for the Elderly Bureau regulates and supervises insurance for long-term care, elderly dementia and the health of the elderly. The Health Insurance Bureau also regulates and supervises health-care insurance and provides plans to improve the insurance system. The Pension Bureau is responsible for national and industrial pensions.

2.3.2 Consumer and professional groups

Consumer groups (mainly patient organizations) play a predominant role in client and patient advocacy. It is estimated that there are more than 3000 patient organizations in Japan, and they can participate as committee members during policy meetings conducted by the MHLW (Patient Groups in Japan, 2017). However, these patient organizations are relatively small and fragmented compared with those in the USA and EU, which means that only a few patient organization have significant clout over the policy making process.

Besides these consumer groups, professional organizations also play an important role in advocacy. The JMA is the national voice of Japanese physicians, although it is not authorized to discipline or sanction doctors because such authority lies with the government. Founded as a compulsory organization in 1916 and then re-established in its current voluntary form in 1947, the JMA's mission is to provide leadership for physicians and to promote the highest standards of medical ethics and education to protect the health of all Japanese citizens (Japan Medical Association, 2017). On behalf of its members, the JMA performs a wide

variety of functions, such as advocating health promotion and patient safety policies and strategies, advocating access to quality healthcare in local communities, providing leadership and guidance to physicians to help them influence, manage and adapt to changes in health-care delivery, and authorizing obstetricians to perform legal abortions. The JMA's membership is 165 000 or 60% of all licensed physicians in Japan; about 50% of the members are general practitioners who are working at small clinics (Japan Medical Association, 2017).

The JNA was established in 1946 for nursing professionals including licensed public health nurses, midwives and assistant nurses. Its aims and missions are to preserve people's dignity as human beings, to meet people's universal needs to stay in good health, and to contribute to people's achieving healthy lives. In addition, it aims to improve nursing quality based on nursing expertise rooted in education and self-learning, promote an environment in which nurses are able to continue working peacefully throughout their lives, and develop and expand nursing fields to meet people's needs (Japanese Nursing Association, 2017).

2.4 Decentralization and centralization

The government regulates and controls nearly all aspects of the health system, including the health insurance system. Across the 47 prefectures, there are a total of 1718 municipalities. There are three types of municipalities in Japan: cities, towns and villages. The Central and local (prefectural/municipal) governments are responsible by law for ensuring a system that efficiently provides quality health-care services. The Central Government sets the nationally uniform fee schedule for insurance reimbursement and subsidizes and supervises local governments, insurers and health-care providers. It also establishes and enforces detailed regulations for insurers and health-care providers at the prefecture levels.

Based on regional context, each prefecture is required by the *Health Care Structural Reform Act* passed in June 2006 to create detailed descriptions called "Medical Care Plans (MCP)". By promoting collaboration and differentiation of medical institutions, these MCP aims to secure medical services for local residents, where necessary healthcare will be provided seamlessly from the acute phase to the long-term phase, including in-home care. Initially, the MCP was introduced in 1986 to control the escalating number of hospital beds. However, the 2006 Act strengthened the MCP by adding "disease-specific integrated clinical pathways" and

stipulating effective liaisons among providers (clinics and hospitals) on a disease-specific basis. One should be cautioned that “integrated clinical pathway” is different from “in-hospital clinical pathway,” which aims to streamline the hospitalization. MCP may include evaluations of quality of care on a regional basis, and some prefectures also included clinical indicators. However, most indicators are limited to structural and process measures, and outcome indicators are not included.

Each prefectural government is responsible for developing this “MCP” for effective and high-quality health-care delivery. Prefectural governments are also in charge of annual reviews and inspections of hospitals to ensure maintenance of compliance with regulatory standards. If a hospital admits too many patients per nurse – an indication of a poor quality of hospital care – the reimbursement rate for the hospital is reduced.

MCPs must be revised every five years. The next revision is scheduled for April 2018 and the focus should be on:

- disease- and service- specific integrated clinical pathways, including goal-oriented and collaborative methods among health-care facilities: in particular, five diseases (cancer, stroke, acute myocardial infarction, diabetes and mental disorders) and six services (emergency care, disaster management, care for remote areas, perinatal care and paediatric care) are prioritized;
- measures to secure an adequate number of health-care professionals;
- measures to secure patient safety;
- zoning secondary and tertiary health-care regions within a prefecture; and
- calculation of the necessary number of beds for every secondary region.

All of the health care provided in Japan is in accordance with the MCP. Although prefectural governors are authorized to develop MCP, it is commonly discussed in committees composed of representatives from local medical and dental associations, hospital associations and stakeholders.

Under the regulatory oversight of MHLW and using the MCP framework generated by the prefectural government, municipal governments provide health promotion activities for their residents as follows:

- Health guidance and check-ups for children at various stages of growth; each municipality gives guidance and consultation on childcare, prevention of diseases, etc. by sending public health nurses to individual homes. These visits are free of charge and provided either by request of the mother or through referral by the doctor.
- Health check-ups for 3–4, 8–10, and 18-month-old infants at health care facilities. In addition, 3-year-old children are checked for their growth, nutritional status, physical and dental health, mental development, behaviour and speech development, and sight and hearing.
- Vaccination of children; municipal governments provide most vaccines free-of-charge to children at all public health centres as well as municipal health centres (MHCs) for protection against twelve preventable diseases: tuberculosis, tetanus, diphtheria, pertussis, hepatitis B, *Haemophilus influenzae* type B (Hib), measles, rubella, polio, *Streptococcus pneumoniae* bacteria, chicken pox and Japanese encephalitis.
- Health consultations for residents aged above 40 years at risk for life-style-related diseases, and cancer screening, of which most are free-of-charge. In general, persons eligible for cancer screening include women aged ≥ 20 years for cervical cancer, women aged ≥ 40 years for breast cancer, and both men and women aged ≥ 40 years for colon, lung and gastric cancer (≥ 50 years for gastric cancer). Screening strategies (e.g. screening according to cancer type, and screening cost, eligibility, and invitation methods) differ slightly by municipality.

2.5 Policy and planning

2.5.1 Policy formulation

Policy formulation, planning and its evaluation are mainly conducted by the MHLW. Policies and strategies that require the creation of or change in a law or call for new budgetary allocation are sent to the Cabinet and discussed at the Diet.

2.5.2 Current planning

Presently, with the increasing longevity and declining fertility of the population, rising medical expenses threaten the sustainability of the

health-care system (Ikegami N et al., 2011). From the viewpoint of financing, Japan's health care and social welfare had been separate before the creation of long-term care insurance in 2000: the former financed by the universal health insurance system while the latter was financed by tax revenue. Whether the system relies on insurance premiums or general taxes makes a crucial difference: in insurance, the premium revenue is set first and the premium rate is set accordingly while in taxation, the tax rate must first be set by law (Article 84 of the Constitution), and the tax revenue is set accordingly. Under taxation, the expenditure is always limited by budget restrictions while under an insurance system, expenditure is not subject to budgeting.

Consequently, the increasing demand for long-term care had to be accommodated by health care facilities and not by welfare facilities. nursing homes, which are financed by taxation, were almost always in short supply. Because admissions to nursing homes were determined by the welfare offices of municipal governments, priority was given to low-income residents. The working population with average income found it hard to receive welfare services. The increasing demand for long-term care was met with geriatric hospitals because anybody could be admitted by doctors' orders without any bureaucratic red tape. As a result, Japan became a country characterized by excessive hospital beds and a chronic shortage of welfare facilities.

To increase Japan's long-term care services, switching the financial source of long-term care from taxation to social insurance was the logical answer. Long-Term Care Insurance (LTCI), a new social insurance scheme, was introduced in 2000 benefiting those requiring long-term care or social services (including nursing care, day service, leasing of welfare devices at home and long-term care at social welfare and medical facilities) (Kikuchi K et al., 2006). As most care-givers are household members, the government tried to shift the burden of care-giving from individual household members to society as a whole. Moreover, the ageing society and increasing demand for health care placed severe pressure on the health insurance system, especially for NHI managed by local governments. There was an urgent need for creating a new financial scheme that would be independent from the health insurance scheme and geared for the long-term; this was the logic behind the LTCI's development (see more details in Chapter 5.8).

Using LTCI and the Act for Securing Comprehensive Medical and Long-Term Care in the Community of 2014, the MHLW asked each prefectural government to create “Regional Healthcare Visions,” requesting each prefecture to estimate the supply and demand of future healthcare needs in each region and to create region-specific health-care systems by 2025 (see details in Chapter 6). Additionally, the MHLW proposed to implement the Integrated Community Care System (ICCS) by 2025. ICCS is a comprehensive system at the community level that integrates prevention, medical services, and long-term care while also providing living arrangements and social care (see more details in Chapter 6) (Ministry of Health, Labour and Welfare, 2017h). By introducing ICCS, the government is trying to shift towards disease prevention and control rather than cure and/or treatment, and moving towards patient-centred integrated services at the community level and home-based care, rather than hospital-centred services.

However, these changes may not be enough to address the profound fiscal and demographic changes facing the nation. The new system will further require a paradigm shift in Japan’s health system, as proposed in *Japan Vision: Health Care 2035*, a report for the Health Minister written by young Japanese health leaders in June 2015 under the leadership of former health minister Yasuhisa Shiozaki (Miyata H et al., 2015; Reich MR et al., 2015). This report proposes that Japan’s health system move from inputs to outcomes, from quantity to quality and efficiency, from cure to care, and from specialization to integrated approaches across all sectors. *Japan Vision: Health Care 2035* proposes three visions to promote the overall goal of “a sustainable health-care system that delivers unmatched health outcomes through care that is responsive and equitable to each member of society and that contributes to prosperity in Japan and around the world”, namely lean health care (implement value-based healthcare), life design (empower society and support personal choice) and global health leadership (lead and contribute to global health). With these three pillars, the report proposes five essential infrastructures as foundations of this vision; innovation, information, sustainable funding, health care professionals, and a world-class MHLW. This is expected to be a benchmark report for the creation of a new health-care system over the next 20 years; it will target people of all lifestyles – from children to older people, from patients to providers – so that individuals feel secure and supported to make the life and work choices that are right for them (Health Care 2035 Advisory Panel, 2015).

2.5.3 Role of development partners in policy and planning

Development partners are usually not involved in domestic policy planning in Japan; however, as a member state of WHO, ILO and OECD, Japan actively participates in the decision-making processes of these organizations and refers to reports and recommendations made by these three organizations on domestic decision-making processes. As to official development assistance (ODA), health care has been one of the main areas of cooperation, and the Japan International Cooperation Agency (JICA) has been conducting several health-care related projects in low- and middle-income countries for more than six decades. Recently, by responding to increasing momentum for UHC, JICA, together with the MHLW and other relevant stakeholders, conducted projects focusing on human resource development and health care financing in several low- and middle- income countries, which all could contribute to attain UHC in project operating countries.

2.6 Intersectorality

Various other ministries are involved in other sectoral issues, such as policies on financing, marketing and sales regulation of tobacco, alcohol and food, education of medical professionals, food and nutrition security, climate change; emergency planning, and engagement with non-governmental organizations and civil society. These ministries include the Ministry of Finance, MEXT, MAFF, and the Ministry of Justice.

One example of an intersectoral approach can be seen in the field of food and nutrition education, which encompasses the education sector (MEXT) for school education, agriculture (MAFF) for food production, as well as health (MHLW) for surveillance and dietary guidance (Nakamura T, 2011). In 2005, the MHLW and MAFF collaboratively developed the *Japanese Food Guide: A Spinning Top*, which is a user-friendly tool pictured as a spinning top to guide people to improve eating habits, and promote dietary education (Yoshiike N et al., 2007). Simultaneously, MEXT started a programme to train people to become “diet and nutrition teachers” in primary schools.

Other recent examples include pandemic preparedness for events like the Ebola virus outbreak in 2013 in West Africa. Pandemics are not only a health sector issue; they are connected with national security, foreign diplomacy, trade and economy, so several organizations like the Cabinet Office, MHLW, MOFA and MOF would be involved. As the president of the

G7 summit in 2016, Japan put health security at the top of the agenda and successfully raised awareness for strengthening the response to public health emergencies as well as attaining Universal Health Coverage (UHC) with strong health systems and better preparedness for public health emergencies. Since health emergencies directly affect the health status of Japanese citizens, the MHLW has a vested interest in building up response capabilities. MOFA emphasized the relevance of UHC in the context of ensuring human security, which is at the core of their foreign policy, and implementing the SDGs as part of its foreign policy framework. Meanwhile, MOF focused on promoting the World Bank Group's funding scheme initiatives (i.e., Pandemic Emergency Facility (PEF) and International Development Association (IDA)) in order to respond to and prepare for health security needs and crises. Since health security is strongly related to national, global and human security, under Prime Minister Abe's leadership, the Cabinet Secretariat and these three ministries aligned successfully around health security. The three ministries and the Cabinet Secretariat constantly had joint meetings at director-general level participation in order to share information and discuss how to consolidate Japan's commitment under a unified government.

2.7 Health information management

2.7.1 Information systems

Although some core statistics related to health care are collected by the Ministry of Internal Affairs and Communication (i.e., population census), most health-related statistics are collected, compiled and analysed by the MHLW. The Statistics Act was originally introduced in 1947, which restricted the use of governmental statistics to administrative use (Government of Japan, 2007). In 2007, the Act was fully revised. Governmental statistical data are now considered to be part of society's information infrastructure, and the revised act of 2007 allow broader use to enable the production and provision of tailor-made tabulation and anonymized data.

The Director-General for Statistics and Information Policy of the MHLW circulates key statistical surveys on vital events and health characteristics of the population. The Director-General for Statistics and Information Policy has a central role in the policy-making process and statistical service management of the MHLW. This includes configuration and online reporting/publishing of seven fundamental statistics: Vital Statistics, Life

Tables, Comprehensive Survey of Living Conditions, Survey of Medical Institutions, Patient Survey, Monthly Labour Survey, Basic Survey on Wage Structure and a total of 23 general statistics for public use (approximately 100 statistical surveys in total have been conducted by the MHLW as a whole, not limited to surveys conducted by the Director-General for Statistics and Information Policy). These statistics can facilitate action for planning and implementing policies, programs, and services to improve the social and economic conditions that affect health.

The Director-General for Statistics and Information Policy has comprehensive mechanisms for the collection of quality data on demographics, healthcare, social welfare, employment and wages, etc. The details of the main services are summarized in Chapter 5.

Japan has another important mechanism for the collection of health data on cancer, which is also administrated by the Director-General for Statistics and Information Policy of the MHLW. Cancer registration in Japan has a long history spanning over 60 years; the first population-based cancer registry was established and administered by the prefectural government of Miyagi (situated in the north-western part of Japan, facing the Pacific Ocean) in 1951.

After the Law on Health and Medical Services for the Aged was enacted in 1983, population-based cancer registries were initiated promptly in many prefectures. However, deficiencies remained in the local government-administered cancer registries, e.g. the reporting of cancer cases to the population-based cancer registries was voluntary task for medical institutions and as of 2007, there were population-based cancer registries in 35 of Japan's 47 prefectures (Okamoto N, 2008). In 2013, in response to the looming elderly population with potentially 2–3 million cancer patients, the Act on Promotion of Cancer Registries was finally enacted in Japan. The Act stipulated that hospital managers must report information on any primary cancer that was first diagnosed in their institutions from 1 January 2016 onwards to the prefectural government (Matsuda T et al., 2015).

2.7.2 Information management system for emergencies

Based on the Act on the Prevention of Infectious Diseases and Medical Care for Patients with Infectious Diseases, the MHLW selects infectious diseases that potentially have a severe and huge burden on the Japanese public and classifies them into five categories. Depending on the category,

health-care facilities and local health centres are obliged to report the occurrence of infection to the Central Government (see more details in Chapter 5).

2.8 Regulation

Regulation of the health-care system has two dimensions: human and capital resources are regulated by the Medical Care Act, and financing is regulated by the Health Insurance Act of 1922. Regulatory bodies consist of a three-tier system, in which the Central Government, prefecture governments and major city governments share different levels of authority. Financing (reimbursement by health insurance) is regulated almost solely by the Central Government. Human and capital resources are regulated through inspection by the government at the prefecture and major city levels through public health centres.

2.8.1 Regulation and governance of third-party payers

All insurers are regulated by the MHLW and consequently have limited discretionary power. There are more than 3000 insurers in Japanese insurance system that are classified on the basis of occupation, place of residence and age. Regulation and governance of third-party payers are explained in Chapter 3. For-profit insurance companies sell voluntary health insurance (VHI), but holding VHI will not exempt an individual from mandatory enrolment in the social health insurance scheme. The role of VHI is supplementary in nature, complementing social health insurance benefit packages.

2.8.2 Regulation and governance of providers

The government enacts health laws, which regulate all aspects of the health-care system. The laws delegate regulatory authority over the health workforce and facilities such as hospitals, clinics and pharmacies to prefectures and major city governments, which conduct inspections pursuant to the Medical Care Act. Professional organizations such as the JMA, although they have no regulatory authority because they are voluntary organizations, have strong political power to influence the drafting of new regulations.

2.8.3 Registration and planning of human resources

The number of health-care professionals such as physicians, nurses, dentists and pharmacists is strongly controlled by the Central

Government. Training for health-care professionals is provided by both public and private educational facilities (see more details in Chapter 4).

2.8.4 Regulation and governance of pharmaceuticals, medical devices and aids

Pharmaceutical products, cosmetics and medical devices are subject to regulation by the Law on Securing Quality, Efficacy and Safety of Products Including Pharmaceuticals and Medical Devices of 1960. The Act was amended in April 1993 to allow public subsidies for research and development of orphan drugs as well as accelerated review of new drugs. New drug applications are subject to preliminary review by a special agency, the Pharmaceuticals and Medical Devices Agency (PMDA), and then final review by the Pharmaceutical and Food Affairs Council. The final decision is left to the discretion of the Minister of Health, Labour and Welfare. Regulations on clinical trials were tightened by the amendment of the *Pharmaceutical Affairs Law* in June 1996.

This tightened regulation coupled with the low interest of physicians in clinical research discouraged doctors from conducting clinical trials. Deregulation to accept foreign research data added to this trend: multinational pharmaceutical companies prefer to conduct clinical trials outside Japan and obtain a new drug approval later by “importing” data to Japan. As a result, a considerable number of new drugs remain unavailable to Japanese patients even after they are approved elsewhere in the world (Pharmaceuticals and Medical Devices Agency, 2017). Furthermore, allowing foreign research data may not always be appropriate because the same drug may have different effects in different ethnic groups. One example is omeprazole (a proton pump inhibitor): a higher prevalence of *CYP 2C19* carriers (i.e., poor metabolizers) in the Japanese population makes the drug more effective at a lower dosage (Kubota T et al., 2001).

To revitalize clinical trials, the Pharmaceuticals and Medical Devices Act was revised to initiate “investigator initiated clinical trials,” which enabled physicians to initiate clinical trials and took effect in July 2003. Until then, only pharmaceutical companies could apply to run clinical trials. Even if physicians wanted certain indications added to existing drugs, they were not authorized to conduct clinical trials by themselves (Off-label prescribing of drugs to patients for indications that have not been approved is prohibited), and pharmaceutical companies would not

be interested in conducting expensive clinical trials without considerable commercial promise.

Another measure taken by the government was to develop a large-scale network of clinical trials to enable participating hospitals and doctors to share resources such as data centres and institutional review boards. A supporting organization, the Japan Clinical Research Assist Centre, was established together with its Data Management Centre in 2001. The Japan Clinical Research Assist Centre is currently assisting seven clinical trials through data management, data analysis, provision of an institutional review board and training of clinical research coordinators.

In April 2003, the Ministry published a “3-year plan for vitalizing clinical trials” to facilitate clinical trials in medical school-affiliated hospitals and, in August 2003, reached an agreement with the JMA for promoting investigator initiated clinical trials in community hospitals. Meanwhile, practices related to research misconduct have been reported in recent years. The fabrication and the falsification of data in five valsartan studies (Jikei Heart Study, Kyoto Heart Study, Valsartan Amlodipine Randomized Trial (VART), Shiga Microalbuminuria Reduction Trial (SMART), and Nagoya Heart Study) have been identified by the board of investigators from each of the universities where these trials were conducted (Mochizuki S et al., 2007; Muramatsu T et al., 2012; Narumi H et al., 2011; Sawada T et al., 2009; The Shiga Microalbuminuria Reduction Trial (SMART) Group, 2014). These were long-term, post-marketing clinical trials with a prospective, randomized, open, blinded-endpoint design. They were not performed under any government regulations and were funded by pharmaceutical companies. This misconduct might have caused disadvantages to patients and has led to unnecessary defrayment and increased cost of health insurance. However, there is no clear punishment against such corrupted actions in the Japanese legal system.

As to regenerative medicine, the Act on Securement of Safety of Regenerative Medicine was enacted in 2013. It aims to promote the safe and effective use of regenerative medicine, while establishing systems for regulating and monitoring the regenerative medicine plan and for inspecting cell culturing and processing facilities. In 2017, retinal cells were successfully produced by iPS cells (induced pluripotent stem cells) harvested from third-party individuals in Japan at the first time in the world: further research is now being conducting to use iPS cells in instances of Parkinson’s disease, cardiac failure and spinal cord injury.

2.8.5 Health technology assessment

Under the national health insurance system, all the prices of health care, medical devices and pharmaceuticals are determined by the MHLW and are scheduled to be revised once every two years (see more details in Chapter 3). The MHLW has a division dedicated for development and revision of the fee schedule and drug price list (Medical Economics division) staffed by medical and dental officers as well as medical economists. The prices of clinical procedures are usually resource-based set but some of them are set based on policy: the prices of clinical procedures to be encouraged may be set intentionally low while those to be discouraged may be set intentionally high. Such price manipulation functions are an important policy tool. Drug prices are set based on market surveys: The Medical Economics division surveys wholesale prices from wholesalers. Prices of new drugs are essentially set resource-based to cover the investment made by pharmaceutical manufacturers.

In response to the rising demand for healthcare in the face of public financing constraints, there has been a rapid growth of health-care technology assessment (HTA) activities (that address the clinical, economic, organizational, social, legal and ethical impacts of a health technology and consider its specific health-care context as well as available alternatives) among health service researchers, physicians and other health professionals in Japan since the mid-1980s. In 1996, the MHLW organized an Advisory Committee for the Application of HTA. Officially, it was known as the first commitment to HTA by the MHLW (Hisashige A, 2009). The main aim of this committee was the application of HTA in health policy decision-making in order to improve the quality and effectiveness of health care. Since then, progress towards implementing HTA in Japan has stagnated, partly because of the opposition from JMA.

In 2012, the first Special Committee on Cost-Effectiveness (SCCE) was set up under the Central Social Insurance Medical Council, an advisory panel under the MHLW, which was tasked with making decisions about the pricing and re-pricing of new drugs reimbursed through the universal health insurance system. The government started to discuss whether to introduce cost-effectiveness assessment into HTA, particularly pricing/reimbursement decisions on health-care technologies (including drugs, devices, surgical techniques and medical procedures). In 2015, a Cabinet decision was made to introduce cost-effectiveness methods for HTA, and

the SCCE decided to implement a new HTA programme, beginning with an HTA pilot program conducted by the Council starting in 2016.

In this new HTA programme, seven drugs have been subjected to the appraisal process, including Sofosbuvir and Nivolumab. It has now been expanded to seven drugs and six medical devices, with a plan to carry out re-pricing by 2018 based on the first HTA appraisal results. It is anticipated that analysis of data from manufacturers will be conducted by a new independent public organization for proof-of-concept appraisals (Central Social Insurance Medical Council, 2012).

2.8.6 Regulation of capital investment

There is no official regulation on capital investment.

2.9 Patient empowerment

2.9.1 Patient information

Most of the health- and welfare- related information is available on the website of the MHLW. Public comments are also popular in Japan: people are encouraged to propose ideas and recommendations related to health-care policies and strategies formulated by the MHLW.

2.9.2 Patient choice

One of the features of the health-care system in Japan is described as “free access to health-care facilities,” in which patients are totally free to choose any health-care facility, regardless of their insurance status or severity of illness (though patients are required to pay some additional fee for tertiary-care facilities if they do not have a referral letter from a primary or secondary health-care facility). The choice of insurers is limited, since patients have designated insurers based on their occupational status.

2.9.3 Patient rights

Article 25 of the Japanese Constitution fundamentally supports patient rights in Japan, by stating that “all people shall have the right to maintain the minimum standards of wholesome and cultured living. In all spheres of life, the State shall use its endeavours for the promotion and extension of social welfare and security, and of public health.” Although there is no basic law determining patients’ right in Japan, Article 25 of the Constitution is the basis of every type of health-care policy in Japan.

2.9.4 Procedure for complaints (mediation, claims)

Medical safety measures in Japan started in 2001 when the Medical Safety Promotion Office was established in the MHLW. Review meetings of medical safety measures have been held regularly since its founding. In 2002, comprehensive medical safety promotion measures were formulated, which mandated hospitals and clinics with beds to establish a medical safety management system within each organization (which was later expanded in 2007 to clinics without beds and birth centres). Recognizing the increasing incidence of medical accidents, in 2003, the MHLW further mandated advanced treatment hospitals to place medical safety managers, medical safety management departments, and patient consultation counters in each respective facility. In 2015, a Medical Accidents Investigation System was introduced, which required medical institutions to provide an explanation to the bereaved family, report to the third-party organization (support center for investigating medical accidents) that conducts necessary investigations, provide an explanation of the investigation results to the bereaved family and report them to the Medical Accident Investigation and Support Centre. Patients or their families who are suspicious about a medical procedure can use this Medical Accidents Investigation System to clarify what was happening at the time of the operation/treatment procedure.

2.9.5 Public participation

Most of the health-care policies created by the MHLW are open to a consultation process with the public through the MHLW website. Expert meetings are also open to the public and the media. However, information provided by the MHLW is not always comprehensive and easy to understand for the general public. Additionally, although the MHLW host an open-consultation period, how the MHLW incorporates these public comments into the actual decision-making process remains unclear, and the general public does not know where and how policies are decided. Patients organizations can sometimes join expert meetings as a member that can lend its voice to the policy-making process, but the selection process for which organization can join remains unclear.

2.9.6 Patients and cross-border health care

It is not common for Japanese people to seek health care outside Japan. However, Japan is now accepting patients coming from abroad to receive high-quality health care services. In 2013, the Central Government published the Japan Revitalization Strategy, in which health care was

determined to be one of the top driving forces for revitalizing Japanese economy (Prime Minister of Japan and His Cabinet, 2013). Under this strategy, Medical Excellence Japan (MEJ) was established under the support of the MEXT in 2013 in order to promote Japanese health-care services overseas and to provide opportunities for foreigners to receive high-quality health care in Japan. According to the report by the Development Bank of Japan, by 2020, the number of foreign patients seeking health care in Japan will increase to 430 000 patients and its market size would expand US\$ 5.5 billion (Development Bank of Japan, 2010). MEJ has started to accredit Japanese health-care facilities, determining whether or not they have the capacity to treat foreign patients.

3 Financing

Chapter summary

Japan's health-care system is based on a social insurance system with tax subsidies and some amount of out-of-pocket (OOP) payment. According to OECD data, total health expenditure increased substantially and accounted for 10.9% of the GDP in Japan in 2015 (ranked 3 among 34 countries), about two percentage points above the OECD average of 9%. Healthcare in Japan is predominantly financed by publicly sourced funding. In 2015, 85% of health spending came from public sources, well above the average of 76% in OECD countries. Direct OOP payments contributed only 11.7% of total health financing. The health insurance coverage rate was nearly 100% while the share of household consumption spent on OOP payments was only 2.2%, 0.6% less than the OECD average of 2.8%. Despite the relatively low OOP payments, the key challenges in Japan are population ageing, rapid increases in chronic illness, escalating medical expenditure, contracting fiscal space, and pressures on the health-care workforce. Reforms of the financing system and greater efficiencies in health systems will be necessary to sustain good health at low cost with equity in the future.

The health insurance covers more than 5000 medical procedures, dental care and drugs. Once every two years, the MHLW reviews the scope of coverage by the national insurance scheme and the billing reimbursement conditions for each procedure, drug, and medical device. There are two major types of insurance schemes in Japan; Employees' Health Insurance and NHI. Employees' health insurance covers those who are public servants or work in companies, while NHI covers the self-employed and unemployed. Employees' Health Insurance is further divided into four major categories: Japan Health Insurance Association (JHIA), Society Managed Health Insurance (SMHI), Mutual Aid Association, and Seamen's Insurance. Japan does not have a single insurance fund; insurers are divided into approximately 3000 organizations. Moreover, the premium rate largely differs from one insurance scheme to the next; this fragmentation is a source of inefficiency in the system and

inequity in premiums. Although there are several cross-subsidy systems among insurance schemes, mainly for the financially weak NHI, financial sustainability and equity among insurance schemes remain major challenges for the Japanese health financing system, especially when one takes into account the rapidly ageing society.

3.1 Health expenditure

Health-care expenditure in Japan has been increasing, as can be seen in Table 3.1.

Table 3.1 Trends in health-care expenditure in Japan, 1995–2014

Expenditure	1995	2000	2005	2010	2014
Total health expenditure (% GDP)	7	8	8	10	10
Public expenditure on health (% of THE)	82	81	82	82	84
Private expenditure on health (% of THE)	18	19	19	18	16
Government expenditure on health (% of GTE)	15	15	18	19	20
OOP payments (% of PHE)	79	81	83	81	85
OOP payments (% of THE)	14	16	16	14	14

Notes: GDP: gross domestic product; THE: total health-care expenditure; GTE: government total expenditure; PHE: private health expenditure; OOP: out-of-pocket

Source: World Health Organization, 2017

According to the WHO Global Health Expenditure Database, total health expenditure as a proportion of GDP increased from 7% in 1995 to 10% in 2014. In 2014, around 84% of expenditure was from public sources and 16% from private sources. Public and private expenditure on health as a proportion of total health expenditure has remained almost constant since 1995. Government health expenditure as a proportion of total expenditure increased from 15% in 1995 to 20% in 2014. In Japan, the share of out-of-pocket (OOP) payments in total health expenditure is relatively low, and has declined from 16% in 2000 to 14% in 2014.

According to the OECD database, the total health expenditure as a percentage of the GDP was 10.9% in 2015. The median health-care expenditure in selected OECD countries as a percentage of GDP was 9% in 2015. Trends in the proportion of GDP committed to health expenditure for all OECD countries are shown in Table 3.2.

Table 3.2 Health expenditure as a percentage of GDP, OECD countries, selected years

Countries	1995	2000	2005	2010	2015
Australia	6.9	7.6	8.0	8.5	9.4
Austria	8.9	9.2	9.6	10.1	10.3
Belgium	7.5	7.9	9.0	9.9	10.5
Canada	8.6	8.3	9.1	10.6	10.3
Chile	-	6.3	6.6	6.7	8.1
Czech Republic	5.8	5.7	6.4	6.9	7.2
Denmark	7.8	8.1	9.1	10.4	10.3
Estonia	-	5.2	5.0	6.3	6.5
Finland	7.4	6.8	8.0	8.9	9.4
France	9.8	9.5	10.2	10.7	11.1
Germany	9.5	9.8	10.3	11.0	11.2
Greece	8.0	7.2	9.0	9.6	8.4
Hungary	6.7	6.8	8.0	7.6	7.2
Iceland	7.8	9.0	9.2	8.8	8.6
Ireland	6.1	5.9	7.6	10.5	7.8
Israel	6.9	6.8	7.1	7.0	7.4
Italy	6.9	7.6	8.4	9.0	9.0
Japan	6.3	7.2	7.8	9.2	10.9
Luxembourg	5.3	5.9	7.2	7.0	6.0
Mexico	-	4.9	5.9	6.0	5.9
Netherlands	7.4	7.1	9.3	10.4	10.7
New Zealand	6.9	7.5	8.3	9.7	9.3
Norway	7.3	7.7	8.3	8.9	10.0
Poland	4.9	5.3	5.8	6.4	6.3
Portugal	7.2	8.4	9.4	9.8	9.0
Republic of Korea	3.4	4.0	5.0	6.4	7.2
Slovakia	-	5.3	6.6	7.8	6.9
Slovenia	-	7.8	8.0	8.6	8.5
Spain	7.0	6.8	7.7	9.0	9.2
Sweden	7.3	7.4	8.3	8.5	11.0
Switzerland	8.8	9.3	10.3	10.7	12.1
Turkey	2.4	4.7	4.9	5.1	4.1
United Kingdom	5.7	6.0	7.2	8.5	9.9
United States of America	-	12.5	14.5	16.4	16.9
OECD median	7.1	6.9	8.0	8.8	8.9

Source: OECD, 2018a

Based on OECD health data, total health-care expenditure as a share of the GDP has increased in all countries since 1995 and, in 2015, health-care expenditure in most European countries accounted for 9–11% of the GDP. A steady increase in health-care expenditure was also noticeable in Japan, from 6.3% of the GDP in 1995 to 10.9% in 2015. Historically Japan has been referred to as achieving a high quality of care with low health-care expenditure compared to other OECD nations. Using the OECD system of health accounts (SHA), which includes more broad data and internationally comparable total health expenditure (THE), Japan's share of the GDP devoted to health rises to be the third highest among OECD nations. However, the official statistics on National Health Care Expenditure (NHCE) published by the MHLW are misleading because they include expenditures covered by health insurance only (excluding LTCl).

Table 3.3 shows the trend in per capita health expenditure in all OECD countries between 1995 and 2015. Per capita health expenditure in Japan has increased from US\$ 1469.5 in 1995 to US\$ 4149.8 in 2015.

Given a rapidly ageing population, the burden of health-care expenditure will continue to grow quickly in Japan. Per capita health expenditure was lower than the median OECD per capita expenditure until 2010, but they officially reached US\$ 4435.6 in 2015, which is higher than the OECD median. All OECD countries have experienced an increase in per capita health expenditure. In particular, the USA, Switzerland, Norway and Luxembourg all saw an increase in per capita health expenditure to values of more than US\$ 6000.

Table 3.3 National health expenditure per capita (US\$ PPP, current price), OECD countries, selected years

Countries	1995	2000	2005	2010	2015
Australia	1554.7	2156.9	2842.1	3607.5	4492.6
Austria	2110.0	2702.0	3340.9	4237.7	5100.0
Belgium	1684.0	2221.1	3007.7	3980.0	4778.5
Canada	2002.4	2421.9	3282.5	4227.8	4532.8
Chile	-	600.7	837.8	1219.7	1877.3
Czech Republic	788.4	925.0	1401.0	1920.5	2434.1
Denmark	1759.7	2321.1	3104.4	4470.1	5057.9
Estonia	-	486.2	818.5	1369.6	1885.2
Finland	1437.4	1827.6	2558.8	3442.1	3993.2
France	2053.4	2505.3	3124.2	3872.0	4529.6
Germany	2251.4	2708.9	3330.6	4413.2	5352.6
Greece	1227.9	1412.7	2301.1	2696.2	2210.1
Hungary	616.8	820.9	1366.0	1622.5	1913.0
Iceland	1878.9	2657.3	3405.8	3383.4	4105.7
Ireland	1154.4	1708.7	3092.6	4555.9	5275.8
Israel	1366.3	1695.8	1769.0	2033.6	2713.0
Italy	1530.3	2047.2	2512.7	3140.5	3351.6
Japan	1469.5	1914.9	2463.7	3204.9	4435.6
Korea	457.5	723.1	1229.8	1976.0	2534.9
Luxembourg	2224.6	3405.3	5125.5	6386.5	6817.9
Mexico	-	484.4	730.8	911.4	1054.5
Netherlands	1700.8	2227.9	3454.7	4638.2	5296.7
New Zealand	1244.2	1606.8	2214.4	3019.8	3544.6
Norway	1767.7	2846.8	3980.8	5167.6	6190.1
Poland	377.1	564.0	807.0	1353.7	1703.6
Portugal	1035.0	1580.5	2145.1	2686.7	2663.7
Republic of Korea	457.9	724.1	1220.1	1951.3	2487.9
Slovakia	-	602.9	1096.3	1951.1	2059.4
Slovenia	-	1403.9	1907.3	2379.5	2730.8
Spain	1142.3	1466.6	2126.6	2885.7	3180.0
Sweden	1660.7	2168.7	2811.6	3536.1	5266.3
Switzerland	2637.6	3331.5	4149.2	5686.3	7535.6
Turkey	238.8	425.3	582.9	872.5	996.6
United Kingdom	1143.0	1565.0	2336.5	3040.7	4125.3
USA	-	4559.0	6444.6	7931.7	9507.2
OECD median	1469.5	1816.4	2463.7	3204.9	4003.0

Note: PPP: purchasing power parity

Source: OECD, 2018a

Table 3.4 shows government spending (not only direct government spending but also compulsory contributory health-care financing schemes) on health as a percentage of total national health expenditure across OECD countries since 1995.

Table 3.4 Government health expenditure as a percentage of total national health expenditure, OECD countries, selected years

Countries	1995	2000	2005	2010	2015
Australia	66.4	68.4	68.4	68.6	67.3
Austria	75.3	75.5	75.1	76.1	75.6
Belgium	76.8	74.6	76.5	77.4	77.5
Canada	70.9	70.0	69.9	69.8	70.2
Chile	-	51.3	36.8	45.5	60.8
Czech Republic	89.7	89.8	86.8	83.3	83.5
Denmark	82.0	83.1	83.7	84.6	84.1
Estonia	-	77.0	76.6	76.4	75.7
Finland	71.2	71.2	75.5	74.3	74.4
France	79.1	78.9	78.7	78.4	78.9
Germany	81.7	79.4	76.3	83.5	84.5
Greece	52.9	61.6	61.7	69.1	59.1
Hungary	82.9	69.6	70.7	67.1	66.7
Iceland	83.5	80.6	81.4	80.4	81.5
Ireland	74.1	77.5	78.9	76.2	70.0
Israel	68.2	63.1	59.9	62.9	60.7
Italy	71.3	72.6	77.5	78.5	74.9
Japan	81.8	80.4	81.2	81.9	84.0
Luxembourg	92.4	82.0	83.2	84.9	82.0
Mexico	-	45.2	42.2	48.6	52.2
Netherlands	75.4	66.4	67.3	82.6	80.7
New Zealand	77.2	78.0	79.7	80.6	80.3
Norway	83.9	81.7	83.1	84.7	85.4
Poland	73.5	68.9	68.7	71.7	70.0
Portugal	61.5	70.5	71.3	69.8	66.2
Republic of Korea	42.1	53.9	56.2	57.9	56.4
Slovakia	-	89.2	75.3	71.9	79.7
Slovenia	-	72.9	73.5	73.3	71.7
Spain	72.0	71.4	71.9	74.8	71.0
Sweden	86.6	85.5	81.8	81.9	83.7
Switzerland	53.6	55.4	59.5	62.5	64.0
Turkey	70.3	61.7	67.7	78.0	78.1
United Kingdom	84.1	79.3	81.3	83.1	79.7
United States of America	-	44.2	45.4	48.4	49.4
OECD median	73.5	74.0	74.0	75.0	76.0

Source: OECD, 2018a

The proportion of health expenditure paid by the public sector in Japan in 2015 was higher than that of many other high-income countries. Government expenditure as a percentage of total national expenditure ranged from 49.4% (USA) to 85.4% (Norway) in 2015. The OECD average has been around 70–75%, while that of Japan has been around 80–85% consistently sits higher than the OECD average.

Japan's NHCE by type of sector from 1995 to 2014 is presented in Table 3.5. Almost all categories have slightly increased since 1995. Most significantly, pharmacy dispensing expenditure has rapidly increased. According to NHCE, pharmacy dispensing expenditure increased about six times from 1995 to 2014, reflecting an increased “out-sourcing” of dispensing to pharmacies (before 1995, it was common for general clinics to directly dispense drugs to patients). The share of pharmacy dispensing expenditure to total health expenditure was 9.4% in 2003 and gradually

Table 3.5 National health-care expenditure (NHCE) and percentage distribution by type of sector and year

Type of medical care	US\$ billions (%)			
	1995	2000	2005	2014
National health care expenditure (1+2+3+4+5+6)	238.6 (100)	266.7 (100)	293.2 (100)	361.1 (100)
1. Medical expenditure	193.5 (81.1)	210.6 (78.9)	221.0 (75.4)	258.9 (71.7)
A. Medical expenditure by type of health-care facility				
Hospitals	131.5 (67.9)	143.1 (67.9)	148.6 (67.3)	181.8 (70.2)
General clinics	62.1 (32.1)	67.5 (32.1)	72.3 (32.7)	77.1 (29.8)
B. Medical expenditure by inpatient/outpatient treatment				
B.1 Inpatient expenditure	87.8 (45.4)	100.0 (47.5)	107.2 (48.5)	135.1 (52.2)
Hospitals	83.7	96.1	103.2	131.4
General clinics	4.1	3.9	4.0	3.7
B.2 Outpatient expenditure	105.7 (54.6)	110.5 (52.5)	113.7 (51.5)	123.8 (47.8)
Hospitals	47.8	46.9	45.4	50.4
General clinics	57.9	63.6	68.3	73.4
2. Dental expenditure	21.1 (8.8)	22.6 (8.5)	22.8 (7.8)	24.7 (6.8)
3. Pharmacy dispensing expenditure	11.2 (4.7)	24.4 (9.2)	40.4 (13.8)	64.5 (17.9)
4. Hospital meals and living expenses	9.6 (4.0)	8.9 (3.3)	8.8 (3.0)	7.1 (2.0)
5. Recuperative treatment expenditure^a	3.0 (1.3)	NA	NA	4.9 (1.4)
6. Expenditure for home-visit nursing care	0.2 (0.1)	0.2 (0.1)	0.4 (0.1)	1.1 (0.3)

Notes: US\$ 1 = ¥113

^a Costs for treatment by judo therapists or acupuncturists, etc. as well as transport costs and prosthetic device expenditure that come under health insurance benefits.

Source: Ministry of Health, Labour and Welfare, 2014a

increased to 18.0% in 2013, and remains almost the same at around 18.0%. Recently, expenditure for home-visit nursing care has also been increasing substantially compared to the period between 1995–2005, reflecting a rapidly ageing society and the government’s strong emphasis on home care (note that the NHCE does not include home-visit health care and nursing expenditure financed from the LTCI).

Table 3.6 presents age-specific health-care expenditure by type of health service in 2014 (note that the data reflect the narrowly defined NHCE estimated by the MHLW, not the more broadly defined THE).

Table 3.6 Health care expenditure by age group in 2014

	Health care expenditure, US\$ billion(%)		
	Total	Inpatient	Outpatient
All ages	2258.9 (100.0)	135.1 (100.0)	123.8 (100.0)
0–14 years	15.4 (6.0)	5.7 (4.2)	9.7 (7.9)
15–44	30.3 (11.7)	12.5 (9.3)	17.8 (14.4)
45–64	56.7 (21.9)	26.4 (19.6)	30.3 (24.5)
65 years and over	156.4 (60.4)	90.4 (67.0)	66.0 (53.3)

Note: US\$ 1 = ¥113

Source: Ministry of Health, Labour and Welfare, 2014a

Health care expenditure increases rapidly with age. The highest medical expenditure was observed in those aged 65 years and above (US\$ 156.4 billion, 60.4% of total) while the lowest costs were associated with those aged 14 years or less (US\$ 15.4 billion, 5.95%). This trend is the same for in- and out-patient medical expenditure, in which those aged 65 years and above account for 67.0% and 53.3% of medical expenditure, respectively, while they only make up 26.0% of the population.

Table 3.7 shows disease-specific health care expenditure by major types of health services. The three main categories of expenditure were for diseases of the circulatory system (US\$ 52.1 billion), neoplasms (US\$ 35.1 billion) and diseases of the respiratory system (US\$ 19.3 billion).

Table 3.7 Health care expenditure by inpatient, outpatient treatment and category of disease in 2014

Category of disease (ICD-10)	Medical expenditure (\$ billion)		
	Overall	Inpatient	Outpatient
Infectious and parasitic diseases	5.7	2.2	2.3
Neoplasms	35.1	23.2	11.9
Malignant neoplasms	30.5	20.5	10.0
Mental and behavioural disorders	16.8	12.2	4.6
Diseases of the nervous system	11.6	7.9	3.7
Alzheimer disease	2.5	1.7	0.8
Diseases of the circulatory system	52.1	30.0	22.1
Hypertensive diseases	16.4	1.9	14.5
Heart diseases ¹	16.1	12.0	4.1
Ischaemic heart diseases	6.6	4.7	1.9
Cerebrovascular diseases	15.8	13.2	2.6
Diseases of the respiratory system	19.3	8.3	11.0
Pneumonia	2.9	2.7	0.2
Chronic obstructive pulmonary disease	1.3	0.6	0.7
Asthma	3.0	0.5	2.5
Diseases of the digestive system	14.9	8.0	6.9
Diseases of stomach and duodenum	3.9	0.8	3.1
Liver diseases	1.5	0.7	0.8
Complications of pregnancy, childbirth and postpartum	2.0	1.8	0.2
Perinatal conditions	1.9	1.6	0.3
Injury, poisoning and other extrinsic impacts	19.1	14.0	5.1

Notes: US\$ 1 = ¥113

¹excluding hypertensive diseases

Source: Ministry of Health, Labour and Welfare, 2014a

3.2 Sources of revenue and financial flows

The Japanese health-care system is primarily funded through insurance premiums subsidized by taxes. Both the Central Government and the municipalities levy proportional income taxes and insurance premiums on their respective populations. According to National Health Care Expenditure (NHCE), insurance premiums contribute to 48.7% of financial contributions followed by public subsidies (38.8%) and patients' co-payments (11.7%) (Ministry of Health, Labour and Welfare, 2014a).

Table 3.8 shows the trends in NHCE by financing sources since 1985. The total proportion of NHCE drawn from taxation increased from 31.7% in 1995 to 38.8% in 2014. Although the share financed by the Central Government has been stable at around 25%, the absolute value largely increased from US\$ 39 billion in 1985 to US\$ 96.6 billion, which imposed a huge fiscal burden. However, insurance premium contributions declined rapidly during this period, from 56.4% in 1995 to 48.7% in 2014. The proportion of OOP payment fluctuated during this period and peaked at 14.4% in 2005. It has been gradually decreasing since, reaching 11.7% in 2014.

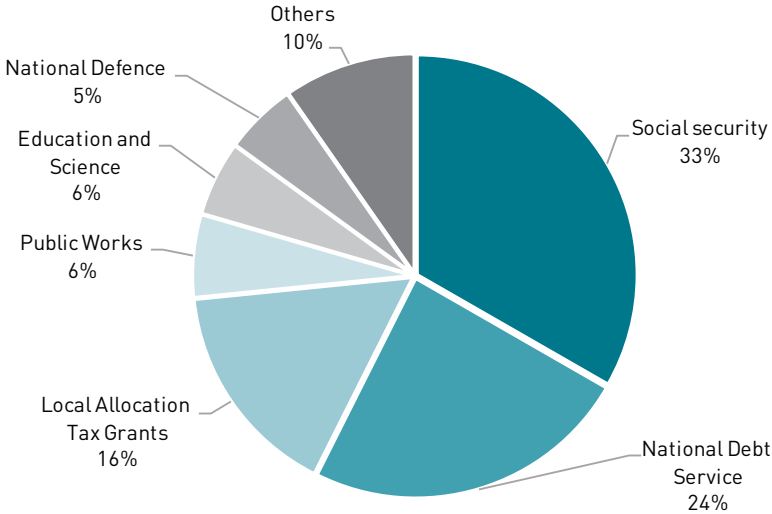
Table 3.8 National Health-Care Expenditure by financial sources (%)

	1985	1995	2000	2005	2011	2014
Total health expenditure	100.0	100.0	100.0	100.0	100.0	100.0
Tax						
Central Government	26.6	24.2	24.7	25.2	25.9	25.8
Local governments	6.8	7.5	8.5	11.4	12.2	13.0
Total	33.4	31.7	33.2	36.6	38.1	38.8
Insurance premiums						
Employees'	23.4	24.5	22.7	20.3	20.1	20.4
NHI (self-employed and others)	30.9	31.9	30.7	28.7	28.3	28.3
Total	54.3	56.4	53.4	49.0	48.5	48.7
OOP payments	12.0	11.8	13.4	14.4	12.7	11.7

Source: Ministry of Health, Labour and Welfare, 2016p

Fig. 3.1 shows the distribution of the annual budget across government activities in 2017. The Japanese government's budget in fiscal year (FY) 2017 was ¥96.7 trillion (US\$ 853 billion), of which social security (healthcare, pension, long-term care, welfare) accounts for approximately one-third (¥32.5 trillion equivalent to US\$ 287 billion).

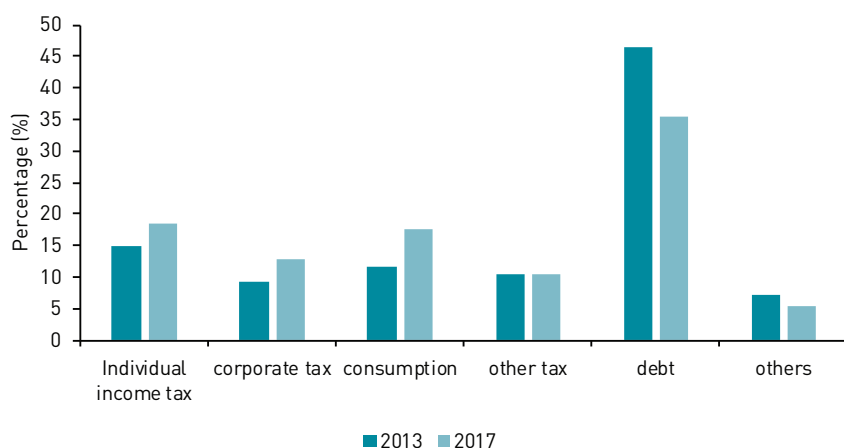
Fig. 3.1 Distribution of government budget, FY2017



Source: Ministry of Finance, 2017a

Fig. 3.2 shows the distribution of sources of Japanese government revenue. As much as 35.3% of the revenue is raised by debt (issuing Japanese Government Bonds, JGBs). Traditionally, Japan’s taxation system has relied on direct taxes rather than indirect taxes. But due to stagnation of the direct tax revenue stream, the consumption tax is increasingly viewed as the main funding source to support the growing social security budget. An increase in the consumption tax rate was part of the Comprehensive Reform of Social Security and Tax proposed in 2013, with the resulting increase in revenues ear-marked for social security (see more details in Chapter 6). As a result, the consumption tax rate was increased from 5% to 8% in FY2014, thus increasing consumption tax revenue from US\$ 93.8 billion (FY2013) to US\$ 152.2 billion (FY2017) (Ministry of Finance, 2013, 2017a). The consumption tax rate is scheduled to be further increased to 10% in FY2019.

Fig. 3.2 Sources of Japanese government revenue in 2013 and 2016



Source: Ministry of Finance, 2013, 2017a

Table 3.9 shows allocation of social security cost. Among the total of US\$ 278 billion social security costs, US\$ 10.3 billion was allocated to JHIA (3.7%), US\$ 30.3 billion was allocated to NHI (10.1% to municipal NHI and 0.8% to NHI societies) and US\$ 42.0 billion was allocated to the late-stage health care system for the elderly (15.1%). The largest share among social security costs was subsidies for pensions, which accounted for 34.9 % in 2016.

Table 3.9 Structure of social security budget, FY 2015

		US\$ billions	%
Subsidy to health insurance	JHIA	10.3	3.7
	Municipal NHI	28.0	10.1
	NHI societies	2.3	0.8
	Late stage health care system for the elderly	42.0	15.1
Welfare benefit for the indigent	Health and LTCI	12.4	4.5
	Others	13.1	4.7
Subsidy to pension		97.1	34.9
Subsidy to LTCI		23.2	8.3
Other social welfare	Child allowance	12.9	4.6
	Disability assistance	13.2	4.7
	Others	16.8	6.0
Public health		4.2	1.5
Labour		1.5	0.5
Total social security budget		278	100

Source: Compiled by the authors based on the data from (Ministry of Finance Policy Research Institute, 2016)

3.3 Overview of the public financing schemes

3.3.1 Coverage

The health insurance coverage rate was 100% in Japan and covered more than 5000 medical procedures, dental care and drugs. Once in every two years, the MHLW reviews the scope of coverage by the national insurance scheme and the reimbursement billing conditions for procedures, drugs, medical devices. All hospitals and clinics are required to comply with the nationally uniform fee schedule set by the MHLW and cannot set their own prices for treatments under the NHI scheme.

There are two major types of insurance schemes in Japan: Employees' Health Insurance and NHI. Employees' health insurance covers those who are public servants or work in companies, while NHI covers the self-employed and unemployed. Employees' Health Insurance is further divided into four major categories as follows: JHIA, SMHI, MAS, and Seamen's insurance (Table 3.10).

Table 3.10 Major insurance schemes in Japan

Name of Insurance Scheme		Insurer	Target population	Number of insurers
National Health Insurance (NHI)		Municipal governments, NHI societies	Self-employed, unemployed, elderly	1716 municipal governments 164 NHI societies
Employees' Health Insurance				
1	JHIA	JHIA	Small- and medium- size companies	1
2	SMHI	Corporate-based health insurance society	Large-size companies	1409
3	MAS	Mutual Aid Societies	Public servants	85
4	Seaman's insurance	JHIA	Seamen	1 (Japan Pension Organization)

Notes: JHIA: Japan Health Insurance Association managed health insurance; SMHI: Society-Managed Health Insurance; MAS: Mutual Aid Societies

Source: Ministry of Health, Labour and Welfare, 2016j

The proportion of people covered by the types of risk pooling mechanisms from 1980 to 2014 is presented in Table 3.11, and the corresponding tax and premium flows are presented in Fig 3.3.

Table 3.11 Number of persons covered by health care insurance by type of insurance system (unit: thousands person)

System category		1980	1990	2000	2005	2010	2015
Population		117 060	124 533	126 926	127 768	127 708	126 939
Number (thousands)							
Total insured population		117 037	124 260	126 351	127 176	126 907	126 207
Employees' Health Insurance							
1	JHIA	31 807	36 821	36 805	35 675	34 845	36 392
2	SMHI	27 502	32 009	31 677	30 119	29 609	29 131
3	MAS	12 520	11 952	10 017	9587	9189	8836
4	Seamen	672	409	228	168	136	125
National Health Insurance		44 536	43 069	47 628	51 627	38 769	35 937
Late-stage medical care system for the elderly (Started in 2008)		-	-	-	-	14 341	15 767
Proportion (%)							
Total proportion		100.0	100.0	100.0	100.0	100.0	100
Employees' Health Insurance		61.9	65.2	62.0	59.1	57.79	58.69
1	JHIA	27.2	29.6	29.0	27.9	27.29	28.67
2	SMHI	23.5	25.7	25.0	23.6	23.18	22.95
3	MAS	10.7	9.6	7.9	7.5	7.20	6.96
4	Seamen	0.6	0.3	0.2	0.1	0.11	0.10
National Health Insurance		38.0	34.6	37.5	40.4	30.36	28.31
Late-stage medical care system for the elderly (Started in 2008)		-	-	-	-	11.23	12.42

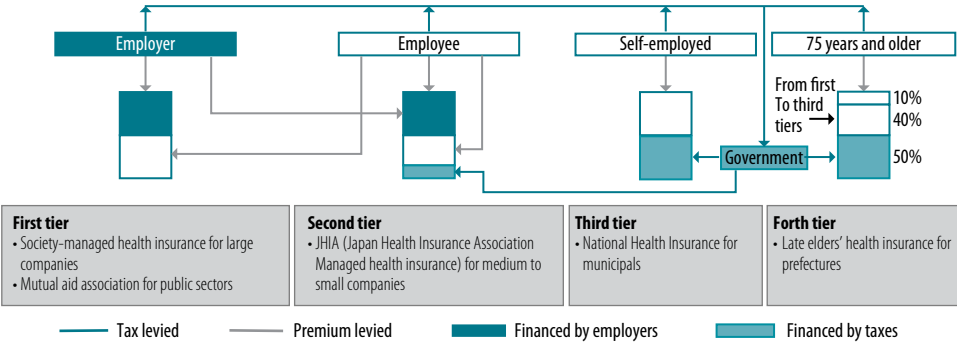
Notes: JHIA: Japan Health Insurance Association managed health insurance; SMHI: Society-managed Health Insurance; MAS: Mutual Aid Societies

Source: Health Labour and Welfare Statistics Association, 2016; Ministry of Health, Labour and Welfare, 2012g, 2016j

The majority (58.69%) of the population is covered by Employees' Health Insurance. Specifically, the JHIA covered the largest proportion (28.67%), followed by the SMHI (22.95%) and MAS (6.96%). The NHI covers 28.31% of the total population. There was a rapid increase in the proportion of the population covered by the NHI in recent decades due to an increase in the number of unemployed persons (mainly attributed to the elderly after retirement). This caused a significant financial burden on the NHI. In order to solve the financial inequity between the Employees' Health Insurance and NHI, the government introduced the late-stage medical

care system for the elderly (75 years old and above) in 2008 (see the details in Section 3.2.3 Pooling of funds).

Fig. 3.3 Financial flow based on insurance flows



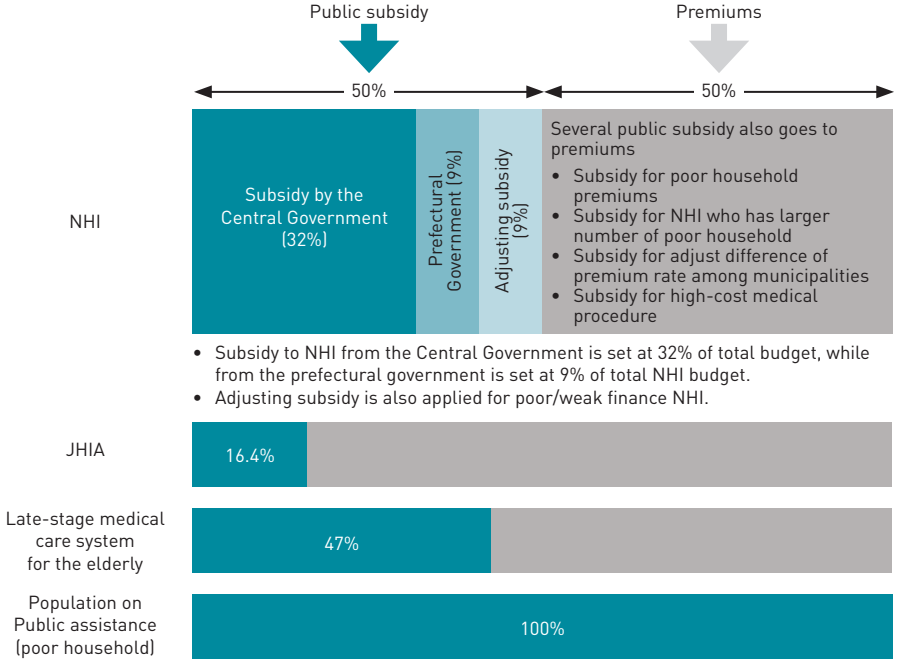
Source: Ikegami N et al., 2011

As shown in Table 3.10, Japan’s health financing system does not have a single payer for all insurance funds; insurers are divided into approximately 3000 organizations. As for the NHI, municipalities have the responsibility to collect premiums. Financial disparities between the NHI and Employees’ Health Insurance have been of major concern in recent decades. In particular, with urbanization and an ageing society, the size of risk pools in the NHI have changed significantly since 1961, and now many smaller municipalities face a declining funding base and increasing expenditure. Additionally, premium rates largely differ across municipalities, as do income levels. This fragmented insurer system remains a source of system inefficiency and premium inequities.

There are several cross-subsidy systems among insurance schemes. For NHI, public subsidies are set to 50% of the total NHI budget, in which 32% come from the Central Government and 9% come from the prefectural government. Besides these subsidies from the Central Government and prefectural governments, an adjusting subsidy is also applied for 9% of the total NHI budget, which aims to enhance financial capacity among municipal governments. The Central and prefectural governments also support premium revenues that flow into NHI by contributing: subsidies for poor household premiums, subsidies for NHI who have a larger number of poor household, subsidies for adjusting differences among premium rates across municipalities, and subsidies for high-cost medical procedures.

As for Employees' Health Insurance, compared with SMHI, JHIA is comprised of small- to middle-sized companies and is facing significant financial burden (though some of SMHI is closed because of economic stagnation). Currently, the Central Government also subsidizes the financially weak JHIA at a maximum rate of 16.4% (Fig. 3.4).

Fig. 3.4 Cross-subsidy mechanism



Source: Compiled by the authors

The health-care benefits for the population on public assistance (living below poverty line) is 100% financed by government subsidies. This segment of the population has been growing since 1995, from 882 229 (0.7% of total population) in 1995 to 2 165 895 (1.7%) in 2014. The amount of health expenditure paid on behalf of this population accounted for 4.2% of THE in 2014 (Ministry of Health, Labour and Welfare, 2016p). In order to limit a further increase in health-care spending for the population on public assistance, the MHLW is currently proposing four areas of priority for subsidizing the poor: promoting the use of generic medicines, reducing polypharmacy, dis-incentivizing frequent use of health-care facilities, and implementing appropriate control of NCDs (Ministry of Health, Labour and Welfare, 2017l).

3.3.2 Collection

The collection mechanism is slightly different between Employee's Health Insurance and National Health Insurance.

An Employees' Health Insurance premium is withheld directly from employee remuneration by employers. Employers are required to withhold premiums on behalf of the insurer. The health insurance premium contributions must be shared equally between employees and employers. The premium rate for health insurance varies considerably by insurer, reflecting their health-care expenditure and income level (insurers with higher health-care expenditure and lower income levels will have to levy higher premiums to raise sufficient revenue). For salaried workers, the average rate is around 10% of their income and is capped at 13%.

For the NHI, the local government has the responsibility of determining the premium rate, and premium structures vary considerably from municipality to municipality. These rates differ between local governments from a minimum of US\$ 2586 per year (7.3%) to a maximum of US\$ 5635 per year (15.9%) (premium rate as % of income). Efforts continue at both the national and local levels to enhance funding for health and social care and improve the sustainability of the system.

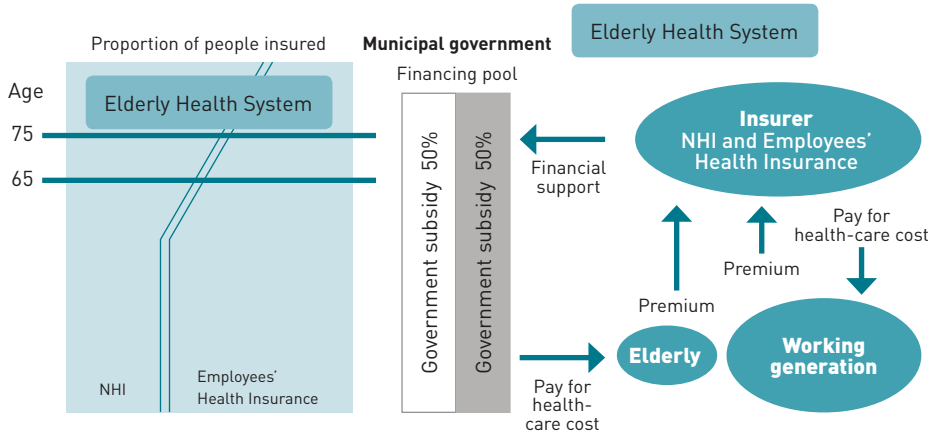
Late-stage medical care system for the elderly

As described in Section 1.3, health care services for the elderly aged over 70 were provided for free until the early 1980s. Due to population ageing and the accompanied increase in health care expenditure, the government decided to introduce the Elderly Health Systems (EHS) in 1982, which required the elderly to pay 10% out-of-pocket (as opposed to 30% in other age groups).

Before 2008, EHS served as a financial redistribution mechanism that adjusted for differences in the burden of elderly care between Employees' Health Insurance and NHI. Many workers (employed in large companies and government agencies) retire before the age of 65 years, and these retired employees join the municipal NHIs, which may not be able to manage the financial burden, especially in smaller rural areas with very large elderly populations. To ensure sustainability, the NHI is subsidized through the EHS with subsidies of up to 41% of benefit disbursement. The redistribution mechanism transfers funds from insurers with below-average enrolment of the elderly above 70 years of age to those

with above-average enrolment (Fig. 3.5). The eligibility age was raised gradually by one year starting in 2002 from 70 years to 75 years.

Fig. 3.5 Elderly Health System before 2008



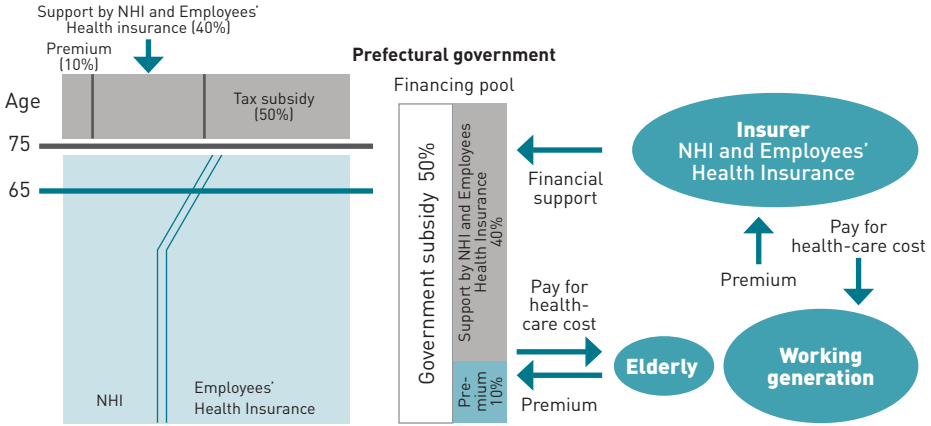
- Increasing proportion of the elderly, who are at high risk of diseases with no or less income
- Expense between the elderly and working generation was not clear
- For the elderly, organization pay for premium and organization pay for health-care cost was different
- Large inequality of premium rate among municipalities

Source: Compiled by the authors based on (Ministry of Health, Labour and Welfare, 2013c)

Despite these subsidies, the imbalance in distribution of the elderly population between the NHI and Employees' Health Insurance has been at the centre of Japan's health policy debate, further aggravated by the ageing population and resultant increase in health care costs. Total unification of multiple health insurance systems into a single payer system remains a policy option (as in the Republic of Korea and Taiwan, China) but has not proved to be politically feasible.

In order to further diminish disparities between the NHI and Employees' Health Insurance, the government introduced radical reforms in 2008 that separated the elderly aged 75 years and over from existing health insurance systems. Fig. 3.6 shows the restructuring of the elderly health-care system in 2008.

Fig. 3.6 Reform of pooling mechanisms in 2008



- Independence financing mechanisms for the elderly
- Expense between the elderly and working generation is clear
- For the elderly, organization pay for premium and organization pay for health-care cost is the same (prefectural government)
- Less inequality in terms of premium rate (set premium rate based on health-care status in each prefecture)

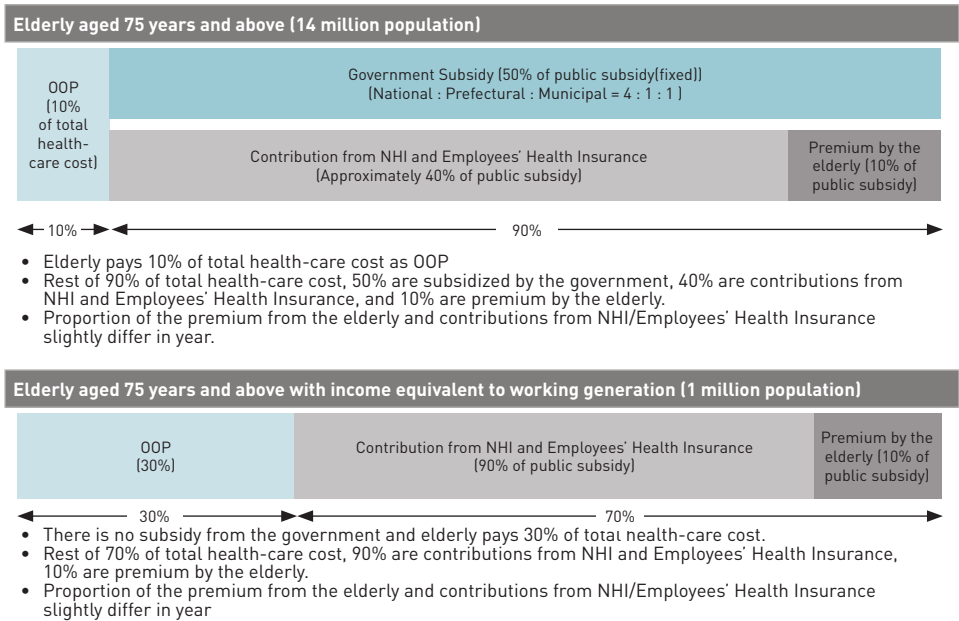
Source: Compiled by the authors based on (Ministry of Health, Labour and Welfare, 2013c)

This system has been modified so that health insurance and the distribution of premiums for those aged between 65 and 74 years are separated from those for the elderly over 75, who are insured by an independent health care system. This system was established under the Elderly Health Care Security Act in April 2008 to replace the EHS. Within this Act, two new financial pooling systems were established in order to reduce the number of elderly individuals covered under the new independent system: (1) late-stage medical care system for the elderly which covers those over 75 years old and (2) early-stage medical care for the elderly, aimed at 65–74 year old people.

The late-stage elderly contribute premiums of approximately 10% of total expenditure, which is deducted from their pensions. The remaining funds for the late-stage medical care system for the elderly is financed by government subsidies (50%) and contributions by the working population (40%). This financial sharing is dictated by law. The beneficiaries (15 million people in FY2013) are divided into two categories: high income (earning income equivalent to the working generation; approximately 1 million people) and others (approximately 14 million people). The

distribution of funds between these beneficiaries is shown in Fig. 3.7. The government subsidy is set at 50% of the benefit expenditure and is further shared among national, prefectural and municipal governments in the ratio of 4:1:1 for beneficiaries, excluding high-income beneficiaries. Furthermore, one quarter of the subsidy from the national government is ear-marked for financial redistribution among the 47 prefectures to balance out financial disparities. Overall, the government subsidy constitutes 47% of the total benefit of the late-stage medical care system for the elderly.

Fig. 3.7 Financial source of the late-stage medical care system for the elderly



Source: Ministry of Health, Labour and Welfare, 2013c

The number of the late-stage elderly population is expected to grow from the current 16 million to 20 million by 2020, while the working population will decline from 109 million to 100 million in the same period. Consequently, the contribution from the working population to the late-stage medical care system for the elderly is expected to grow from US\$ 54.7 billion (FY2014) to US\$ 91.1 billion by 2020. The contribution levied on the working population as their add-on premium is becoming an important health policy issue. So far, the contribution used to be levied on health insurers on a capitation basis (the amount of contribution is determined simply by multiplying the number of enrollees by a fixed

“price”). The per-capita contribution “price” has increased consistently – from US\$ 368 in FY2009 to US\$ 438 in FY2013 – because the share of premium revenue from the elderly has not kept pace with the increasing numbers of the elderly population. After 2017, the capitation was abolished and replaced with an income-based contribution. The rate was set at 3.73% of salary.

3.3.3 Purchasing and purchaser–provider relations

Japan’s purchaser–provider relationship is characterized by a complete dissociation between the two parties. The relationship between purchasers (health insurers) and providers (hospitals, clinics and pharmacies) in Japan is contractual in nature, and insurers are prohibited from making direct contract with purchasers.

According to the Health Insurance Law (Section 63), providers who wish to participate in health insurance practices must apply to the MHLW (criteria are described in Section 65 and Section 71 of this law). In practice, such procedures (as well as regulatory supervision) are delegated to the regional branch offices (RBOs) of the MHLW. There are eight RBOs in the country, each having sub-branches in every prefecture. These contracts between providers and the MHLW under Japan’s Health Insurance Law are considered to be *contracts based on public law*, as opposed to *contracts based on private law*. The distinction is profound: in contracts based on private law, contracting parties have the freedom to decide the contents of the contracts.

In the case of private law-based contracts, purchasers and providers can agree on the prices and scope of benefit, and it is possible for them to set differential pricing for doctors. Internationally, it is common practice that doctors with high performance or credentials can claim higher prices than doctors otherwise, and make contracts with purchasers accordingly. Under contracts based on public law, however, such freedom of contract is never possible. The contents of the contracts, such as prices and scope of coverage, are dictated by law. As a result, providers can choose only to accept them or not, leaving no room for negotiation.

The contents of contracts dictated by law are expressed in the form of the practice rules and the national uniform fee schedule as well as the price list of drugs and medical devices. This national uniform “fee schedule” has a dual function: (1) listing the definitions and scope of services covered by health insurance; and (2) setting prices and billing conditions assigned to

each service. The prices of both services and drugs are uniform throughout the country, and providers are strictly prohibited from balance billing.

Once a provider enters into a contract with the MHLW, the provider is required to obey the rules and regulations laid down by the MHLW. Providers submit monthly claims for reimbursement to the Claims Review and Reimbursement Organizations (CRROs) established in all 47 prefectures. All claims submitted by local providers are reviewed by expert committees, and the performance and observance of the rules by each provider is monitored. Despite this, there are huge inconsistencies in terms of claims and reimbursements for the same conditions by prefecture, and these remain a governance concern related to conflict of interest (COI) among CRROs expert committees, insurers and providers. In July 2017, the MHLW proposed the reform plans for CRROs, which encourage the CRRO's pursuit of efficiency and promote an automated system for reviewing claim data by fully utilizing ICT and artificial intelligence. By introducing uniform checklist criteria for reviewing claim data, automated reimbursement processes and avoidance of COI will be encouraged during the review process (Health Insurance Claims Review and Reimbursement Services, 2017).

Any deviation from the practice rules or the fee schedule may incur disciplinary action by RBOs of the MHLW. Disciplinary actions vary from mild (individual guidance) to punishable (on-site inspection and cancellation of contracts). Cancellation of provider contracts is perceived by many as de facto denial of practice because almost 100% of Japan's health care is under health insurance, and it would be difficult for ordinary physicians to continue to practice without contracts.

In FY2014, a total of 4466 cases of individual guidance were provided and 41 providers (hospitals, clinics or pharmacies) and 30 physicians, dentists or pharmacists had their contracts cancelled according to the MHLW.

By enabling the sanction of providers and the setting of standardized fees, this contract system allows the Central Government to exert great influence over the entire health-care system: controlling costs, distributing human resources more evenly across the country, and maintaining quality and quantity of health-care services with equity (patients have secured to access to good quality health-care services regardless of their income, place of residence and types of hospitals (publicly owned or privately owned)).

3.4 Out of pocket payments

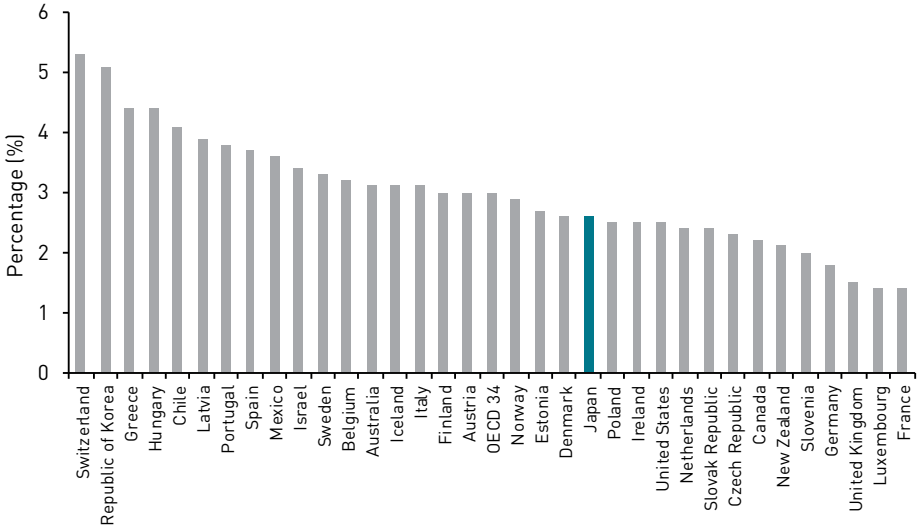
The proportion of total health expenditure paid from OOP expenses is an important marker of the extent of risk pooling and prevention of financial catastrophe in a health system. In countries where public funding for health services is inadequate and risk pooling mechanisms in health financing are limited or unavailable, unexpectedly high OOP payments and illness-related production or income loss can trigger asset depletion, indebtedness and reductions in the consumption of essentials, sometimes leading to financial catastrophe.

3.4.1 Cost sharing

Although the OOP rate is set at 30% for those under the age of 70, 20% for those aged 70–74 and 10% for those aged 75 and over, only 11.7% of health spending was paid directly by patients in Japan in 2014. The reasons include a lower OOP rate for children and the elderly, capped-payment for higher health expenditure (see more details in Section 3.4.2) and free health expenditure for certain conditions (see details in Section 5.14).

Fig. 3.8 presents the burden of OOP payments across OECD countries.

Fig. 3.8 Out-of-pocket medical spending as a share of final household consumption in 2015 (or nearest year)



Note: This indicator relates to current health spending excluding long-term care (health) expenditure.

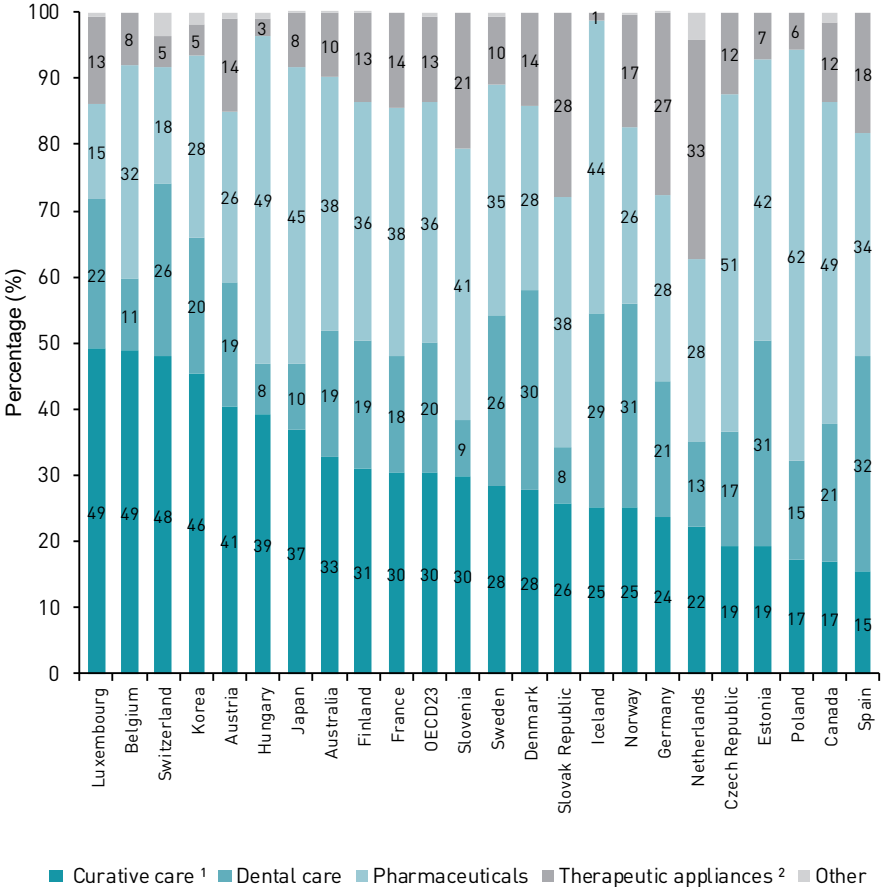
Source: OECD, 2017a

The burden of OOP health spending can be measured either as a share of total consumption expenditure or of total household income. On average in OECD countries, the OOP payment as a proportion of total household consumption, was around 2.8%. The average share varied substantially across OECD countries in 2013, from the lowest value in Turkey (1.2%) to the highest in the Republic of Korea (4.7%). In Japan, 2.2% of total household consumption was spent on OOP payment for health services, slightly lower than the OECD average. The low burden of OOP payments in Japan is due to low co-payments and caps on maximum OOP payment size, which is known as the high-cost medical expense benefit.

High-cost medical expense benefits started in 1973 in order to prevent patients from impoverishment because of health care expenditure. The MHLW sets the maximum co-payment per household based on household income on a monthly basis (see more details in Section 3.4.1).

The share of OOP spending on health-related goods and services across selected OECD countries is presented in Fig. 3.9. In most OECD countries, curative care and pharmaceutical goods or services are the two most important spending items for OOP payments, which account for more than 60% of total health care expenditure. In Japan, Hungary, Slovenia, Iceland, Poland, Estonia, Canada and the Czech Republic, more than 40% of OOP payments are for pharmaceuticals. However, in Luxembourg, Belgium, Switzerland, the Republic of Korea and Austria, household payments for curative care account for about 40% or more of total household medical expenditure. OOP payments for pharmaceutical goods or services are substantially higher than for curative care in Japan and many other OECD countries. Health expenditure related to dental care also contributes a larger share of household medical spending. On average, OECD countries spend around 20% of OOP payments on dental care. The highest OOP payments related to dental care in 2013 were in Spain (32%), and the lowest in Hungary and the Czech Republic (8%). Around 13% of OOP payments for therapeutic appliances was for therapy in OECD countries in 2013. In Japan, this figure was only 8%.

Fig. 3.9 Share of out-of-pocket medical spending by type of goods and services in 2013 (or nearest year)



Notes: This indicator relates to current health spending excluding long-term care (health) expenditure.

¹Including rehabilitative and ancillary services.

²Including eye care products, hearing aids, wheelchairs, etc.

Source: OECD, 2016

3.4.2 Cost-sharing (user charges)

Japan’s health insurance has no deductibles but has cost-sharing. Cost-sharing is a fixed proportion of the cost paid by the service user (the patient), with the insurers paying the remaining proportion. The proportion of cost-sharing is uniformly dictated by law. It is typically 30% for the population younger than 69 years, and 10% for the late-stage medical care system for the elderly, which covers those 75 years or older. Cost-sharing is fixed at 20% for beneficiaries aged between 70 and 74

years, as well as pre-school-age children (up to 6 years old). For the very poor receiving welfare payments under the Public Assistance Act, no cost-sharing is required.

The cost-sharing rate of 30% is relatively high by international standards, but there is a monthly and annual cap on the OOP payment for individuals and households. This cap is metered to the income of a beneficiary or a household. For example, for beneficiaries younger than 70 years, with no taxable income, the monthly cap is set at US\$ 312. Beneficiaries are required to pay 30% of costs up to the cap every calendar month, but only are required to pay the cap amount plus 1% of health expenditure if the cap is exceeded. This cap is further lowered starting from the fourth month in which the cap is reached during the most recent 12-month period. For example, if a beneficiary reached the cap in February, June and November of a given year, the beneficiary will qualify for a reduced cap starting in December.

Once the cap is reduced, it becomes easier for the beneficiaries to fulfil the requirement (of reaching the cap in at least three months during the most recent 12 month period), and they will be able to enjoy the reduced cap longer. This is advantageous for patients with chronic conditions in mitigating OOP payments. For certain chronic conditions, such as dialysis, the monthly cap is even further reduced. The policy of imposing relatively heavy cost-sharing (30%) for all beneficiaries at the point of visit while limiting the cost-sharing metered to one's income is an effective way of protecting households financially. However, as the patient needs to temporarily pay the total amount of health-care expenditure (the difference between actual health expenditure and the cap payment is reimbursed a few months later), this cap system favours the rich rather than poor, and heavy cost-sharing will prevent abuse of services.

Table 3.12 shows the structure of the cap according to the number of months of excessive payments and the income of the patient.

Table 3.12 Structure of the cap according to the number of months of excessive payments and the income of the payee in Japan in 2015

Age 70 years and over		
Annual income (in US\$)	Outpatient cap by month (by individual) (in US\$)	Monthly cap (by household) (in US\$)
>32 600	390	707 + (HE-2356) *1%
	*If the cap limitation is exceeded more than three times within past 12months, then the household only pays US\$ 390	
13 700–32 600	106	390
No taxable income	No taxable income	217
	No taxable income (below US\$ 700)	132
Age less than 70 years		
Annual income	Monthly cap (by household)	Frequent user monthly cap by household
≥102 300	2228+ (HE-7428) *1%	1236
67 800–102 300	1477+ (HE-4923) *1%	820
32 600–67 800	707+ (HE-2356) *1%	390
<32 600	508	390
No taxable income	312	217

Notes: 1 US\$=¥113

HE: health expenditure, Frequent user: those who reach the cap limitation more than three times within 12 months.

Source: Ministry of Health, Labour and Welfare, 2017f

3.4.3 Direct payment

Although most of the services are covered by national insurance, some services, especially for non-diseases, cosmetic and luxury purposes, are not covered by health insurance and patients have to pay the full amount. A typical example is normal vaginal delivery, as childbirth is not considered as a disease. Instead of providers (such as obstetric clinics or midwiferies) claiming reimbursement from health insurance, the government has introduced several types of one-time cash benefits for deliveries, which are likely to offset the cost. The primary benefit is ¥420 000 (approximately US\$ 3500). Although obstetric clinics and midwives can set the price of delivery freely because delivery is not covered under the uniform fee schedule set by the MHLW, in most cases, providers will set their prices somewhere within the limit of the cash benefit. Emergency and Caesarean section deliveries are treated as diseases covered by health insurance and providers will claim

reimbursement from health insurance in the same manner as any other treatment.

Other examples of direct payments include cosmetic surgery, orthodontics, abortions and infertility treatment. In Japan, infertility treatment (i.e. assisted reproductive treatment, ART) is proliferating due to advancing maternal age. Such infertility treatments are not covered by health insurance, and OOP payment for couples who wish to have children can be heavy. To alleviate the financial burden on couples suffering from infertility, subsidies commenced in 2004. Couples with a combined annual income of less than ¥7.3 million (approximately \$60 000) can receive a subsidy of ¥150 000 for a treatment cycle. However, the subsidy is far smaller than the actual charges of many clinics, which can be as high as ¥1 million and have no price control (infertility treatment is not covered by health insurance, which means that each hospital and clinic can set prices freely). Table 3.13 shows the growth in subsidies for infertility treatment, and the considerable demand for some services that are covered only by direct payments, which means patients are required to pay 100% of all health-care costs.

Table 3.13 Trend in subsidies for infertility treatment

Year	2004	2008	2009	2010	2011	2012	2013
Number of subsidized cases	17 657	72 029	84 395	96 458	112 642	134 943	148 659

Source: Ministry of Health, Labour and Welfare, 2017s

Japan’s health insurance system generally does not allow double billing (balance billing and extra billing) for services included in the national uniform fee schedule and the Drug Price List. Balance billing is payment over and above the amount reimbursed by insurance. Extra billing is billing for services or conditions that are not listed. This prohibits doctors from claiming services covered by health insurance while at the same time providing services not covered by health insurance. In other words, if a doctor provides services not covered by health insurance, providers cannot claim reimbursement from health insurance entirely, which means all aspects of the service are no longer covered by the insurance system.

3.5 Voluntary private health insurance

Voluntary private health insurance is fairly common in Japan; people participate in order to cover the expenses (e.g. transportation, food and

loss of income due to absence from work) that are not covered by NHI scheme. As described in the previous paragraph, all Japanese residents are covered by the NHI scheme and must pay 0–30% of health-care expenditure as OOP payments. These private health insurance plans are not strictly insurances per se, but rather pay out supplementary income equivalent to the amount that would have been earned had there been no illness, not for health-care expenditure already covered under the NHI.

As of 2015, the total market size of voluntary health insurance was about US\$ 400 billion, which was the second largest in the world after the USA. It is estimated that almost 90% of households in Japan participate in at least one voluntary private health insurance.

3.6 Other financing

Japanese health financing systems are primarily supported by the NHI system subsidized by taxation. People who would still like to be covered for OOP payments may also purchase private health insurance plans. There are no other sources of financing in Japan.

3.7 Payment mechanisms

Since the health-care system in Japan is largely controlled by the MHLW in terms of health-care financing and price-setting of health-care costs, payment mechanisms are also controlled mainly by the MHLW (though the majority of health-care facilities are privately owned). As described in previous paragraphs, the prices of all kinds of health care/medical procedures are set by the national fee schedule, and patients pay their health-care expenditure according to the price list.

4 Physical and human resources

Chapter summary

In Japan, there were 8442 hospitals, 101 529 clinics and 68 940 dental clinics in 2016. They are predominantly privately owned. Compared with other OECD countries, inpatient care in Japan is characterized by longer average hospital stays, with a larger number of inpatient beds per capita. Japanese hospitals are in general well equipped with high-technology devices such as computed tomography (CT) and magnetic resonance imaging (MRI) scanners.

Japan has a relatively small number of physicians (2.35 per thousand populations) but more nurses (9.06 per thousand populations) when compared with other OECD countries (OECD average density of physicians and nurses are 3.02 and 8.30, respectively). The number of women physicians was around 20.4% in 2016, although the proportion has been steadily increasing over time. Responding to the need for increased healthcare, the government decided to increase the number of physicians in 2008, and the quota for the number of students entering medical schools has increased by roughly 20% since then. In 2004, mandatory postgraduate clinical training was introduced for medical doctors and dentists, and a new board-certification system for medical doctors is scheduled to start in 2018. These changes are likely to influence career paths and staffing levels of relevant sectors of the health-care workforce in the future.

4.1 Physical resources

4.1.1 *Capital stock and investment*

Current capital stock

The Medical Care Act, 1948 defines hospitals and clinics as places where physicians or dentists conduct a medical or dental practice, serving either the general public or a particular group of people (Government of Japan, 1948b). Hospitals are defined to have facilities that can accommodate at least 20 patients, and clinics have fewer than 20 hospital beds, although many have none at all.

In 2016, there was a total of 178 911 active medical facilities, including 8442 hospitals, 101 529 general clinics and 68 940 dental clinics. Hospitals are further divided into 7380 general hospitals and 1062 psychiatric hospitals (Ministry of Health, Labour and Welfare, 2017r). Of the general clinics, 7629 (7.5%) had beds, and 93 900 (92.5%) did not. Among 7629 general clinics with beds, two thirds (70.7%, 5395) had 10–19 beds. Among 8442 hospitals, there were 3039 facilities with 20–99 beds (36.0%), 2754 with 100–199 (32.7%), 2231 (26.5%) with 200–499, and 418 with 500 beds or more (5.0%).

Health facilities are licensed by local governments. Prefectural governors, city mayors, or heads of special wards within a health-care centre can request reports from the founders or managers of hospitals, clinics, and birth centres, or send staff to inspect the facilities. According to the 2011 report of spot inspections of medical facilities, the observance rate for compliance with the requirements of the Medical Care Act, 1948 and related laws, including human resources and equipment, was 96.4% for medical workers, 98.0% for management, 98.3% for ledger sheets/ records, 98.9% for subcontracting, 98.2% in fire/disaster prevention systems and 99.7% for radiation management (Ministry of Health, Labour and Welfare, 2013b).

The Japan Council for Quality Health Care (JCQHC) was founded in 1995 and started an accreditation programme for hospitals in 1997. Accreditation is voluntary and hospitals wishing to achieve it must apply and pay the necessary fees. By March 2015, 2270 hospitals (approximately 26.7%) were accredited and met the required standards. The JCQHC emphasizes that accreditation is intended to help hospitals improve their quality on a voluntary basis, not to close them. Hospitals that fail to meet the standards are encouraged to make the necessary improvements and then reapply.

Investment funding

The main source of funding for private hospitals is borrowing from banks or the Welfare and Medical Service Agency (WAM). The WAM provides low-interest, long-term loans for construction, maintenance and operation of facilities to private social welfare institutions such as intensive care homes for older people and support facilities for disabled people, and to private medical institutions, including hospitals, clinics and long-term care facilities. At the end of 2013, WAM's balance of loan receivables was US\$ 14.3 billion (including construction funds, funds

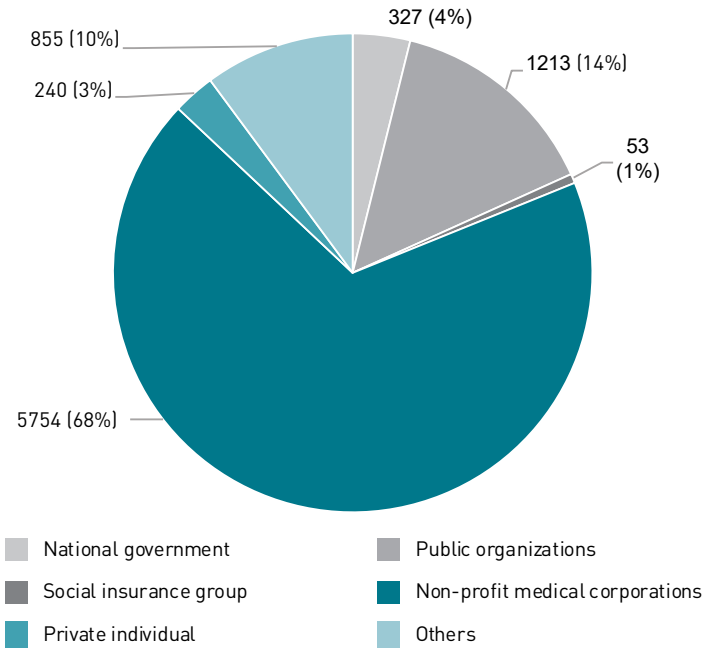
for purchasing equipment, and funds for long-term operation), while US\$ 1.5 billion was provided in loans that year (Welfare and Medical Service Agency, 2017).

To raise money more directly, the issue of medical institute bonds (known as local medical promotion bonds) was commenced in February 2004, subject to guidelines announced by the MHLW from October 2004. In June 2006, the Medical Care Act of 1948 was revised to allow social medical corporations to issue securities called social medical corporation bonds via the Financial Instruments and Exchange Act of 1948. According to a survey of the MHLW, by 2013, 18 medical corporations had issued a total of 41 medical institute bonds, with a total monetary value of US\$ 38 million (Ministry of Health, Labour and Welfare, 2013d).

4.1.2 Infrastructure

Japanese hospitals and clinics are predominantly privately owned. In 2016, of the 8442 hospitals, privately owned hospitals numbered 6849 (81.1%), with 5754 (68.2%) of these owned by non-profit medical corporations, 240 (2.8%) solely owned by private individuals, and 855 (10.1%) owned by others, including non-profit public corporations, non-profit school corporations and private medical schools (Fig. 4.1) (Ministry of Health, Labour and Welfare, 2017r). Although they are privately owned, all of them are for non-profit. 327 had been established by national agencies, 1213 by public organizations (such as prefectures or municipal governments), and 53 by social insurance groups. The number of hospitals across all categories has declined steadily by more than 1500 from a peak of 10 096 in 1990, reflecting mergers and acquisitions in recent years, and has been less than 10 000 since 1992. Under the current fee schedule set by the MHLW, large-size public hospitals mainly for acute and tertiary care are in a state of financial crisis and are largely subsidized by the Central Government and local governments, while most small, private clinics and hospitals for non-acute care are well-financed.

Fig. 4.1 Number of hospitals by ownership in 2016



Source: Ministry of Health, Labour and Welfare, 2017r

Non-profit medical corporations incorporated under the Medical Care Act of 1948 are similar to profit-making corporations, in that they are established by direct investment from private shareholders, but are prohibited from disbursing their profits to shareholders in the form of dividends. The corporate assets of the corporations are the property of the shareholders, who are entitled to sell them at market value at any time. Non-profit medical corporations are subject to regulation and supervision by prefectural governments.

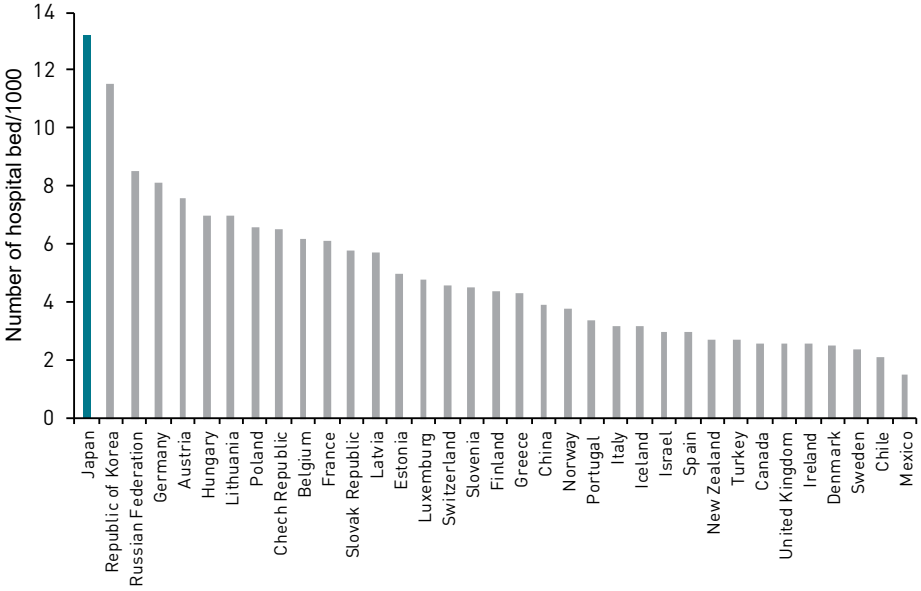
Hospital beds

Hospital beds are classified as general use, long-term care, psychiatric disorders, infectious diseases and tuberculosis. In 2016, there were 1 664 525 inpatient beds in all facilities, of which 1 561 005 (93.8%) were in hospitals. A total of 891 398 hospital beds were for general use, 328 161 (36.8%) were for long-term care, 334 258 (37.5%) were for psychiatric disorders, 1841 (0.2%) were for infectious diseases and 5346 (0.6%) were specifically for tuberculosis.

In 2015, Japan had 13.2 hospital beds per 1000 population, compared with the OECD average of 4.9 for countries with available data (Fig. 4.2) (OECD, 2015). Compared with other OECD countries, Japan has more inpatient beds per head of population, although the number has declined somewhat from a peak of 1.68 million beds in 1992 (Fig. 4.3).

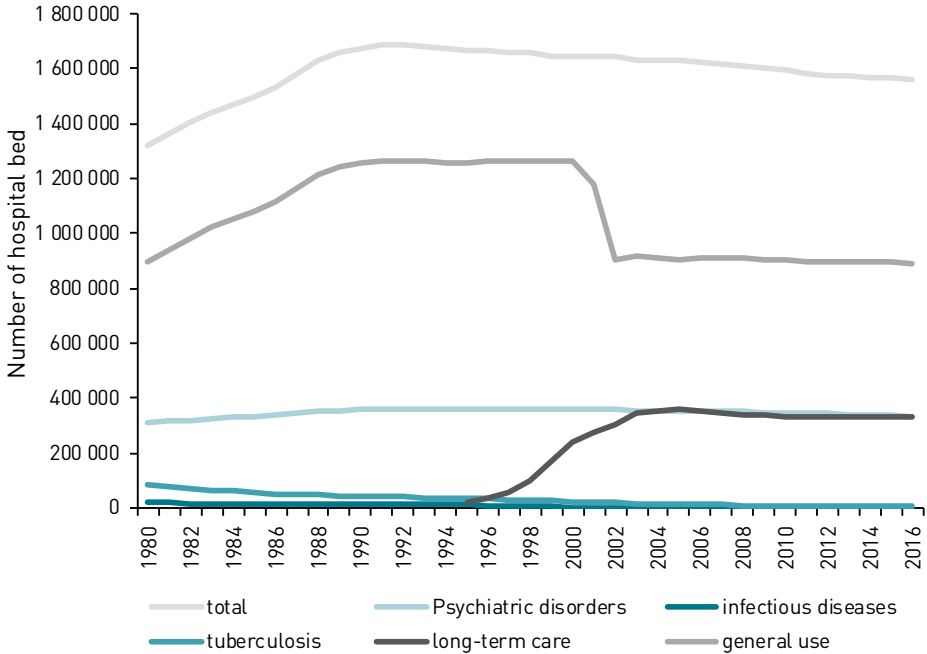
In 2016, there were 101 529 clinics, of which 7629 had beds, and 68 940 dental clinics, of which 27 had beds. The total number of beds in clinics was 103 451, and of these, 9906 were for long-term care. Like the number of hospitals, the number of beds within clinics has gradually decreased since its 1992 peak of 1 686 696 (Ministry of Health, Labour and Welfare, 2017r).

Fig. 4.2 Hospital beds per 1000 population in selected countries in 2015



Source: OECD, 2016

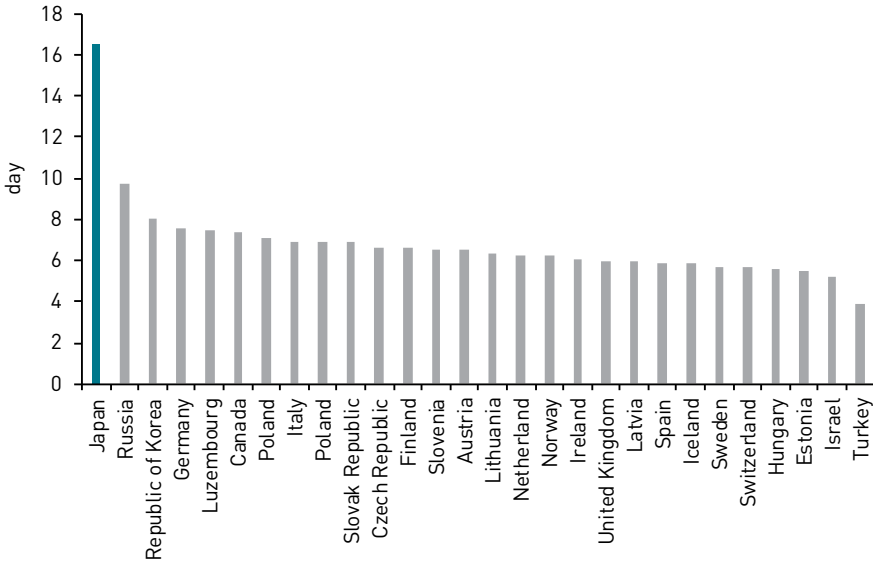
Fig. 4.3 Trend of the number of hospital bed in Japan



Source: Ministry of Health, Labour and Welfare, 2017r

Inpatient care in Japan is generally characterized by longer hospital stays than in other OECD countries (Fig. 4.4). The average length of stay for acute care was 16.5 days for all hospital beds in 2015. The average across OECD countries was 6.8 days (latest available data). The average length of stay in Japan has, however, been steadily declining because of the fee schedule revision to incentivize the reduction of chronic care beds at hospitals. Moreover, the subsequent rise of welfare homes that provide care for older people and are covered by LTCI contributes to this decrease, which is not included in the OECD statistics (OECD, 2016). As described in Section 2.4, each prefecture is required to create Medical Care Plan (MCP) once in every five years and the next revision will happen in April 2018. It is expected that transition of the elderly from hospitalization to welfare home will be further facilitated by the next MCP to promote functional differentiation and hospital bed reduction.

Fig. 4.4 Average length of hospital stay for acute care, all causes in 2015



Note: Japanese data refer to average length of stay for acute care (excluding long-term care beds in hospitals).

Source: OECD, 2018b

4.1.3 Medical equipment

Japanese hospitals are in general well equipped with high-technology devices (Matsumoto M et al., 2004). There is no restriction on hospitals that prohibits the purchase of medical equipment, and hospitals are free to open any specialty department without authorization from the Central Government. Two out of every three hospitals, including psychiatric hospitals, have whole-body CT scanners (Table 4.1). The number of CT scanners per 1000 population is 0.101, compared with a mean of 0.024 in other OECD countries, 0.051 in Australia, and 0.041 in the United States of America and Iceland. There are 0.047 MRI scanners per 1000 population in Japan, significantly higher than the OECD average of 0.014, and higher also than the rates of 0.035 in the United States of America, 0.025 in Italy and 0.024 in the Republic of Korea.

Although this high prevalence of high-technology equipment may improve patient access, it may not be efficient and may incur over-utilization and cost escalation. An important challenge facing health policy-makers is ensuring there is balance between cost effective distribution of high-technology equipment within a region and ease of access for patients.

Clinics fulfil a general diagnostic function and are usually very well-equipped with apparatus for X-rays, electrocardiography, and blood and urine tests. Clinics with inpatient beds function effectively as small-sized hospitals, and their beds constituted 9.9% of the total beds in 2004. This comprehensive function of clinics is an important basis for primary health care in Japan. People can access very convenient services at affordable prices almost anywhere in the country and receive treatment at a comparatively early stage of any illness.

Table 4.1 Number of functioning diagnostic imaging devices (MRI units, CT scanners, PET) in 2014

Imaging modality	Unit		
	Hospital	Clinic	Total
MRI	4531	1977	6508
≥1.5 T	3601	749	4350
<1.5 T	930	1228	2158
CT	7716	5400	13 116
Multi-detector	6702	3075	9777
Other	1014	2325	3339
PET	72	29	101
PET-CT	346	100	446

Notes: CT: computerized tomography; MRI: magnetic resonance imaging; PET: positron emission tomography

Source: Ministry of Health, Labour and Welfare, 2017r

4.1.4 Information technology

The proportion of the Japanese population using the Internet is estimated to be 82.8%, with 100.4 million people and 99.9% of companies using the Internet in 2013. The most common methods of access are personal computers at home (58.4%), followed by smartphones (42.4%) and personal computers elsewhere (27.9%). Access from smartphones has recently increased. Broadband is used by 97.4% of households that access the Internet at home, with 59.3% using optical communication lines. Mobile phone lines are used in 50.2% of households (Ministry of Internal Affairs and Communications, 2014).

In healthcare, the MHLW has drawn up two documents to encourage information technology (IT) use. These are the *Grand design for informatization of the healthcare field* (2001) and the *Grand design for information utilization in medical care, health care, long-term care, and welfare sectors* (2007) (Ministry of Health, Labour and Welfare, 2001,

2007). Based on a “Declaration to be the World’s Most Advanced IT Nation” by the Cabinet in June 2013, the MHLW has encouraged sharing of information among medical and long-term care institutions (Cabinet Office, Government of Japan, 2013a). In parallel, the Cabinet launched “Japan Revitalization Strategy” in the same year, in which all insurers were required to analyze reimbursement data and to create “data health plan” so as to encourage each insurer to provide evidence-based health promotion activities to their insured population. More recently, the “Working Group on information and communication technology (ICT) usage in the area of health care” was launched in 2015 under the MHLW. Experts from this working group proposed the “Person centered Open Platform for wellbeing (PeOPLE)” concept, which connects and integrates individuals with every kind of health-related data throughout the life-course, and encourages these data to be used both by health-care professionals and the patients themselves (Working group on information and communication technology (ICT) usage in the area of healthcare, 2017a, b). Referring to these recommendations from the expert working group, the MHLW setup the “Administrative reform promotion office for data health” in 2017, which considers the seamless usage of data by both health care and long-term care professionals. All of these were designed to promote online claim systems, development of medical information databases, and exploration of other ways to make use of ICT.

In 2014, electronic health records were used in 2321 hospitals (27.3% of the 8493 hospitals). The high cost of introducing electronic health records, sensitivity of data privacy from the general public are major obstacles to disseminating electronic medical records. Ordering systems, picture archiving and communication systems were used in 3857 (45.4%) and 5755 (67.8%) of all respondent facilities (Ministry of Health, Labour and Welfare, 2017r).

4.2 Human resources

There are many types of health and health related workers in Japan providing services at various settings. Table 4.2 shows the types of health workforce members with national licensure and corresponding numbers in 2014.

Table 4.2 Types and numbers of selected health and health related workforce with national licensure in Japan

Type	Description	Governing law	Numbers*	Source
Physicians	A person who contributes to the improvement and promotion of public health and ensures the healthy lives of the citizenry through the administration of medical care and health guidance. Medical practitioners are allowed to establish clinics or birth centres.	Medical Practitioners Act, Medical care Act	311 205	1
Dentists	A person who contributes to the improvement and promotion of public health and ensures the healthy lives of the citizenry through the administration of dental care and health guidance. Dentists are allowed to establish dental clinics.	Dental Practitioners' Act, Medical care Act	103 972	1
Pharmacists	A person who contributes to the improvement and promotion of public health by administering the dispensing of medicine, supply of medicine and other pharmaceutical health and sanitation services, thereby ensuring the healthy living of citizens.	Pharmacists Act	288 151	1
Public Health Nurses	A person who engages in health guidance using the title of public health nurse under the license of the Minister of Health, Labour and Welfare. Public Health Nurses provide practice at public health centres, public administrations including municipality, cities or villages, industry, schools or hospitals.	Act on Public Health Nurses, Midwives and Nurses	51 280	2
Midwives	A woman who engages in midwifery or health education for pregnant and postpartum women or newborns under the license of the Minister of Health, Labour and Welfare. Midwives have the right to establish a midwifery home.		35 774	2
Nurses	A person who engages in providing care to persons with injuries and/or illnesses or postpartum women, or to assist medical treatment under the license of the Minister of Health, Labour and Welfare. Nurses provide care at various settings including health-care institutions, home-based care, social welfare and business industries.		1 149 397	2
Assistant Nurse	A person under licensure from the prefectural governor to provide the same practice as nurses under the direction of a physician, dentist, or nurse. *Assistant nurse is not national license, licensure is granted by prefecture governor.		323 111	2

Table 4.2 Types and numbers of selected health and health related workforce with national licensure in Japan (Con't.)

Type	Description	Governing Law	Numbers*	Source
Clinical radiologic technologists	A person who irradiate radiation to the human body, which includes photography, irradiation equipment or radioactive isotope treatment under the direction of a doctor and/or dentist.	Clinical Radiologic Technologists Act	44 375	3
Medical technicians	A person who engages in the service of conducting a series of examinations (microbiological, serological, haematological, pathological, parasitological, biochemical and physiological) under the direction of a doctor and/or dentist.	Clinical Technicians Act	55 072	3
Physical therapists (PT)	A person who provides exercise therapy and electronic thrush, physical massage, thermal or other physical services to those with physical disability in order to restore their fundamental physical and operational ability.	Physical Therapists and Occupational Therapists Act	74 236	3
Occupational therapists (OT)	A person who helps people across the lifespan participate in the things they want and need to do through the therapeutic activities (occupation). They target to those with physical and mental disabilities in order to restore applied motion or social adaptation ability.		43 884	3
Orthoptists	A person who provides corrective exercises and necessary examination to those with impaired binocular vision function under the direction of a doctor.	Orthoptists Act	4227	3
Clinical engineers	A person who operates the life support management device and its maintenance and inspection under the direction of a doctor.	Clinical Engineers Act	20 380	3
Prosthetist and Orthotists	A person who produces and adapts prosthetic appliances under the direction of the doctors.	Prosthetist and Orthotists Act	66	3
Dental hygienists	A person who engages in preventive practice for teeth and oral cavity diseases under the direction of a dentist. Practice includes mechanical removal of deposits and application of medication.	Dental Hygienists Act	123 831	2
Dental technicians	A person who prepares, repairs or processes a prosthetic footprint, a filling or any orthodontic device to be used for dental care.	Dental Technicians Act	34 640	2
Emergency life-saving technicians	A person who provides life-saving practice to severely injured persons in order to prevent significant deterioration of the symptoms and avoid fatality during transportation to a hospital or a clinic. Life-saving practice includes preserving respiratory capacity, recovery of heart beat and other measures.	Emergency Life-saving Technicians Act	31 012	4

Table 4.2 Types and numbers of selected health and health related workforce with national licensure in Japan (Con't.)

Type	Description	Governing law	Numbers*	Source
Massage and finger pressure therapists	A person who provides massages and finger pressure therapy besides physicians.	Act on Practitioners of Massage, Finger Pressure, Acupuncture and Moxibustion etc.	116 280	2
Acupuncture therapists	A person who provides acupuncture therapy besides physicians.		116 007	2
Moxibustion therapists	A person who provides moxibustion therapy besides Physicians.		114 048	2
Judo therapists	A person who treats external injuries related to bones and joints, including fractures, sprains and dislocations at a therapy centre or clinic.	Judo Therapists Act	63 120	2
Speech language hearing therapists	A person who provides speech and other types of exercises, examination and advice, guidance and other necessary assistance to those with impaired functions of speech, language and hearing in order to maintain and improve those functions.	Speech language hearing therapists Act	15 123	3
Registered Dietitian	A person who provides nutritional guidance necessary for medical treatment of the sick and injured and nutritional guidance for maintaining and promoting health. Dieticians engage in providing food service management and providing guidance and instruction necessary for improving nutrition at health-care and long-term care facilities	Dietitians Act	57 295	2
Certified social worker	A person who provide counseling, advice, guide and other services with social work knowledge and skills for those who are physically or mentally disabled and cannot lead a daily life due to environmental reasons.	Certified Social Worker and Certified Care Worker Act	201 243	5
Certified care worker	A person who provides long-term care to the elderly	Certified Social Worker and Certified Care Worker Act	1 494 460	6

Notes: * figures are as of December 31 in 2014 (source 1), December 31 in 2016 (source 2), October 1 (source 3) in 2016, April 1 in 2014 (source 4) and September 30 in 2016 (source 5, 6). For source 1, 2, 4–6 is the registered number while the data for source 3 is the number of full-time workers.

Sources: 1. Ministry of Health, Labour and Welfare, 2014c; 2. Ministry of Health, Labour and Welfare, 2016n; 3. Ministry of Health, Labour and Welfare, 2017r; 4. Fire and Disaster Management Agency Ministry of Internal Affairs and Communications, 2014a; 5. Ministry of Health, Labour and Welfare, 2017w; 6. Ministry of Health, Labour and Welfare, 2017v

4.2.1 Health workforce trends

Table 4.3 shows the trends in the number of doctors, dentists, pharmacists and nurses in Japan between 1980 and 2014 (2016 for Public Health

Nurses, Midwives, Nurses and Assistant Nurses). In October 2014, there were 311 205 doctors (2.35/1000 population), 103 972 dentists (0.82/1000 population) and 288 151 pharmacists (2.27/1000 population). In December 2016, there were 51 280 public health nurses (0.40/1000 population), 35 774 midwives (0.28/1000 population), 1 149 397 nurses (9.06/1000 population) and 323 111 assistant nurses (2.55/1000 population).

Table 4.3 Health-care workers per 1000 population, 1980–2014 (latest available year)

Human resources for health	1980	1990	2000	2010	2014
Physicians	1.33	1.71	2.02	2.30	2.35
Dentists	0.46	0.60	0.72	0.79	0.82
Pharmacists	0.99	1.22	1.71	2.16	2.27
Public health nurses*	0.15	0.20	0.29	0.35	0.40
Midwives*	0.22	0.19	0.19	0.23	0.28
Nurses*	2.12	3.27	5.15	7.44	9.06
Assistant nurses*	2.04	2.75	3.06	2.93	2.55

Note: *2016 Data for Public Health Nurses, Midwives, Nurses and Assistant Nurses

Sources: Physicians, Dentists, Pharmacists: Ministry of Health, Labour and Welfare, 2014c; Public Health Nurses, Midwives, Nurses, Assistant Nurses: Ministry of Health, Labour and Welfare, 2016n

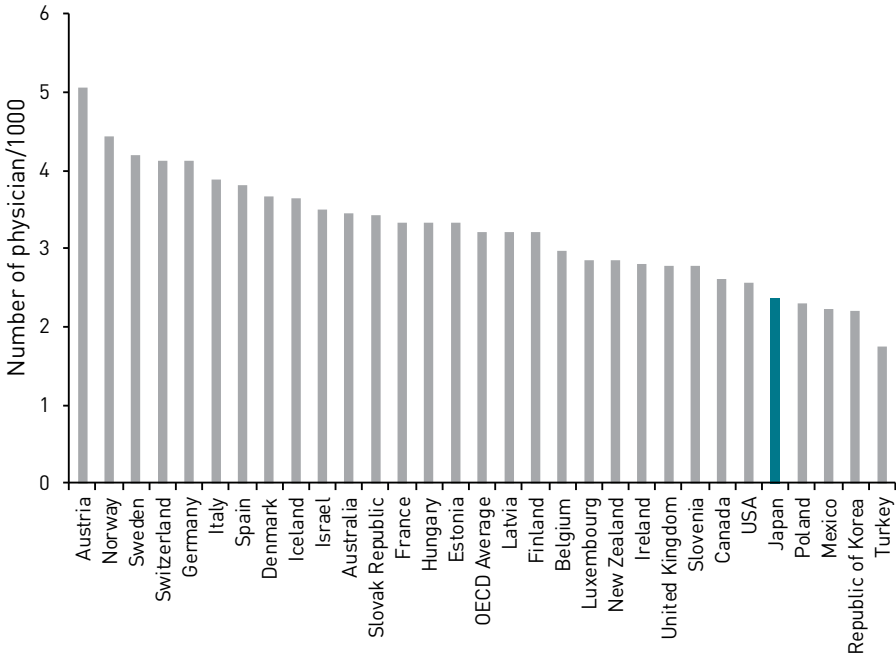
Doctors

Of the 311 205 licensed physicians in 2014, 296 845 (95.4%) were working in medical facilities, with 194 961 (62.6%) in hospitals and 101 884 (32.7%) in clinics (Ministry of Health, Labour and Welfare, 2014c). There were 15 659 women doctors (10.0% of the total) in 1980 and 60 495 (20.4%) in 2014. Of doctors aged less than 29 years, 9165 (34.8%) were women. According to the OECD data, which is slightly different from the MHLW data, Japan has a relatively low supply of doctors (Fig. 4.5), with an estimated 2.3 per 1000 population in 2013, or the latest available year, compared with an OECD average of 3.2 (OECD, 2015). This partially reflects historical decisions to reduce the number of medical student seats and a lack of easy access to overseas-trained medical staff due to medical and institutional barriers to foreign workers in the Japanese system.

The enrolment capacity for medical universities in the 1960s was set at about 3000–4000. In 1973, the Cabinet endorsed a vision of every prefecture having a medical school of its own (Basic Economic and Social Plan, the Cabinet Office). Since then, a number of new medical schools have been established. The enrolment capacity per year reached a peak of

8280 in 1981. In 1986, a special committee of the then Ministry of Health and Welfare recommended that the number of new doctors be reduced by 10% before 1995, in anticipation of a large increase in the number of graduates. As a result, enrolment capacity dropped to 7625 in FY 2003. By 2008, however, responding to public and political concerns about the insufficient numbers of physicians, the declining trend was reversed to increase the numbers of medical students again. In FY 2017, the enrolment capacity reached 9420 (Ministry of Education, Culture, Sports, Science and Technology, 2017a). Student enrolment capacity has increased in universities that provide scholarships for those engaging in community health care or set selection criteria, co-operating with other universities to provide the bases for training research physicians and decreasing the number of dental students.

Fig. 4.5 Number of physicians per 1000 population in different countries in 2014



Source: OECD, 2016

Nurses, Public Health Nurses and Midwives

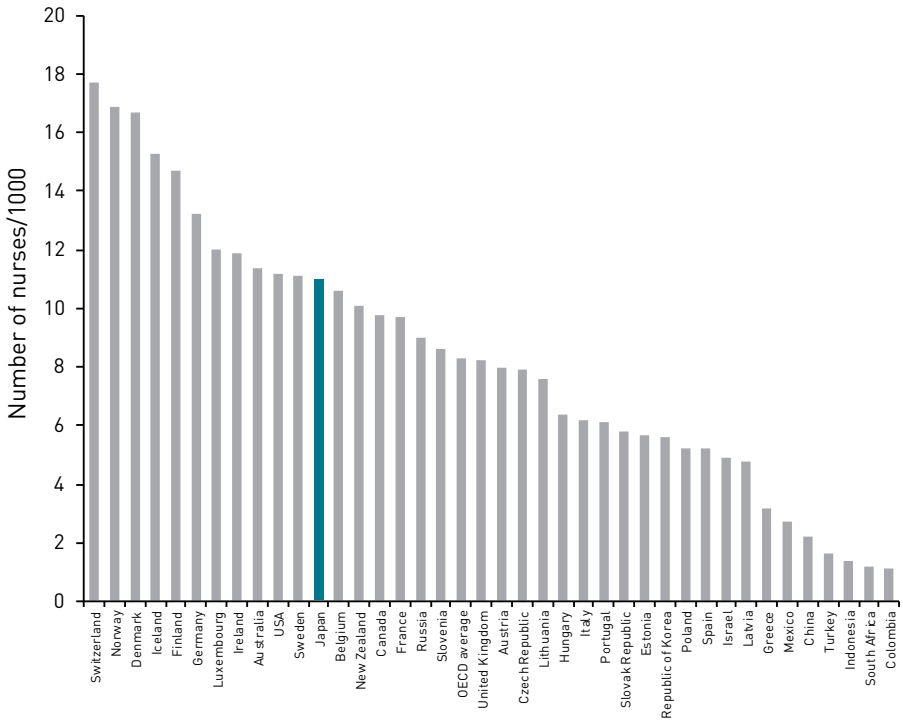
In 1980, there were 248 165 practicing nurses in Japan (2.12/1000 population), but this number increased rapidly to 1 149 397 (9.06/1000 population) by 2016, a four-fold increase in almost 40 years.

However, the nursing shortage has remained a Japanese health-care issue since 1990s, due to the increasing demand for health care that comes with rapidly ageing society. The Government estimates that there will be a shortage of 30 000–130 000 nursing personnel by 2025 under the several scenarios in the Comprehensive Reform of Social Security and Tax. Based on the *Act on Assurance of Work Forces of Nurses and Other Medical Experts* in 1992, several policies have been implemented by the MHLW in collaboration with other stakeholders in order to have sufficient number of nurses at all times while also monitoring supply and demand in the nurse market. The main policies include:

1. Reinstatement support: recruitment centre “nursing centre” in central-branch and each prefecture that supports nurses (who are not working) in job-hunting and trainings. The government started a notification system requiring nurses who are not working to report to nurse centres in order for the government to capture the potential number of nurses that could be added to the workforce.
2. Improvement of work environment: Due to a high turnover rate of 11.0%, especially among new graduate nurses (7.5% in 2013) (Japanese Nursing Association, 2015), the government at both the central and local level established a management system for improvement in health-care work environments, including all types of health workforce, aiming to enhance the quality of health care and assure patient safety through the creation of positive work environments (Ministry of Health, Labour and Welfare, 2017g).
3. Fostering of nurses: Financial support to individual university graduates pursuing non-nursing majors to enter nursing schools.
4. Financial support: A regional medical nursing care comprehensive fund was established at the prefectural level to be used for various activities aimed at improving nurse retention, training and work environments.

The total number of public health nurses was 17 957 (0.15/1000 population) in 1980, and steadily increased to 51 280 (0.40/1000) in 2016. A similar trend can be observed in midwives: figures were 25 867 (0.22/1000) in 1980, and have now reached 35 774 (0.28/1000) in 2016 (Ministry of Health, Labour and Welfare, 2016n). Japan has a similar number of nurses compared to majority of other OECD countries (Fig. 4.6).

Fig. 4.6 Number of nurses per 1000 population in selected countries in 2014

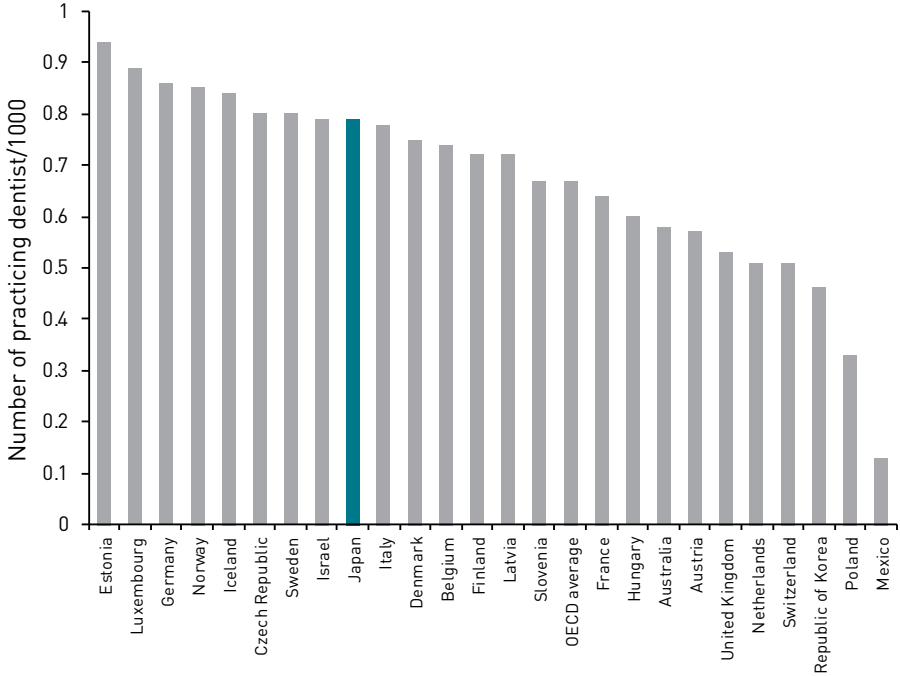


Source: OECD, 2016

Dentists

In 1980, there were 53 602 dentists (0.46/1000 population), which increased to 103 972 (0.82/1000 population) in 2014. Of these, 6590 (12.3 %) were women in 1980, but this figure rose to 23 428 (22.5%) in 2014 (Ministry of Health, Labour and Welfare, 2014c). Among dentists aged less than 29 years, 43.6% were women. Compared with the OECD average, Japan has a larger number of dentists (Fig. 4.7).

Fig. 4.7 Number of practicing dentists per 1000 population in selected countries in 2015 (or latest available year)



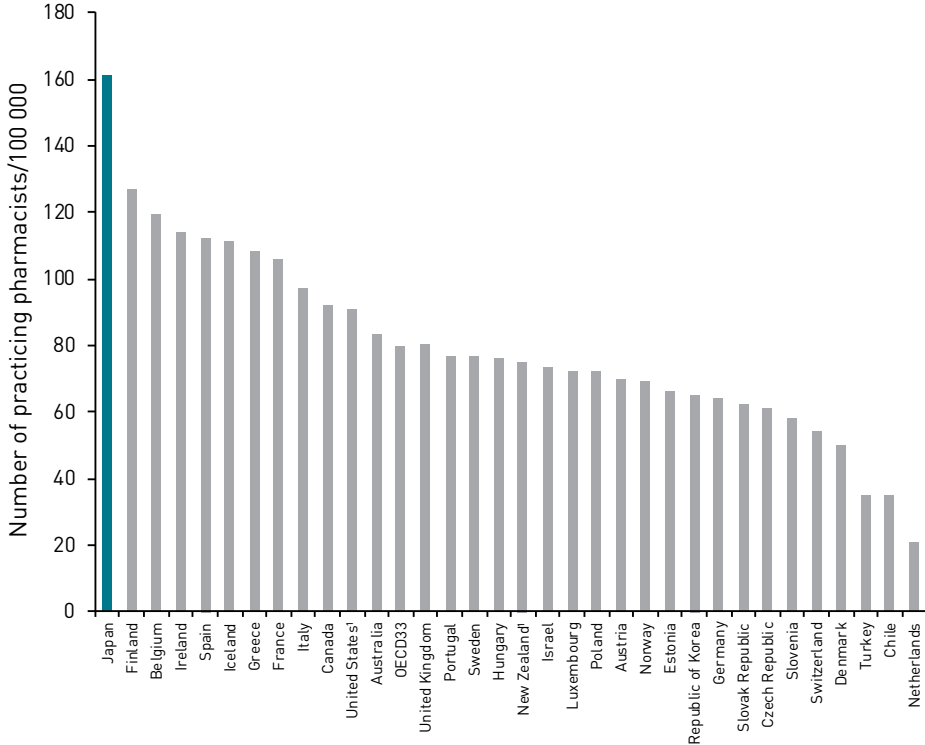
Note: 2014 data for Denmark, Finland, Japan and Sweden

Source: OECD, 2016

Pharmacists

In 1980, there were 116 056 pharmacists in total, a rate of 0.99 per 1000 population, rising to 217 477 (1.71/1000 population) in 2000, and 288 151 (2.27/1000 population) in 2014. Of these, 175 657 (61.0%) were women in 2014. In 2006, MEXT introduced a 6-year course for pharmacists instead of the original 4 years of course, which includes compulsory practical training in pharmacies and hospitals. Compared with other OECD countries, Japan has a large number of pharmacists (Fig. 4.8).

Fig. 4.8 Practicing pharmacists per 100 000 population in 2013 (or latest available year)



Note: 2012 data for Japan, Finland, Sweden, Luxembourg, Denmark and Netherlands, 2011 data for Greece to be consistent with Figure 4.6

Source: OECD, 2016

4.2.2 Professional mobility of health workers

Physicians

Professional mobility of physicians is limited in Japan, and few physicians with a Japanese medical license go abroad to practice. Those graduating from a medical school or obtaining a medical license outside of Japan are required to take documentary examinations and demonstrate their ability to provide suitable medical care in Japanese if they want to take the national examinations for medical practitioners. They may then be permitted to sit for the national examination or be required to take a pre-examination and undergo practical training for 1-year or more.

Based on formal agreements between countries, medical licenses may be given to foreign physicians who have passed the national examinations

for medical practitioners in English, provided certain conditions are met. They must undertake medical practice at medical facilities approved by the Japanese government and forbidden from accepting Japanese public health insurance. This agreement is so far limited to doctors from the United Kingdom, the United States of America, France and Singapore (Cabinet Office, Government of Japan, 2013b).

There is also a special system for foreign health-care professionals coming to Japan to undertake medical training. They seek to contribute to international networking and collaborations with physicians and nurses in the medical field. They also aim to improve medical standards in developing countries, in which they are allowed to conduct medical and nursing services. The system is currently being expanded (Ministry of Health, Labour and Welfare, 2011a).

Nurses and care workers

Similar to physicians, it is not common for nurses with Japanese licenses to go abroad for practice. As for accepting foreign nurse, the government currently has an agreement between Indonesia, the Philippines and Viet Nam; it is quite limited for other foreign nationals coming to Japan for practice.

Through the new “Indonesia–Japan collaboration on the enhancement of nursing competency through in-service training” established through the Economic Partnership Agreement (EPA) in 2008 (similar arrangements exist with the Philippines and Viet Nam), foreign applicants working towards acquiring the national license engage in training at receiving facilities with the intention of passing the national examination (Siyam A et al., 2013). 1203 potential foreign nurses and 3492 potential certified care workers had entered Japan under this scheme between FY 2008 and FY 2017. The MHLW stated that this scheme was not designed to address nursing and care worker’s shortages, but had been implemented following strong requests from other countries, meanwhile reinforcing economic cooperation (Ministry of Health, Labour and Welfare, 2017a).

Those who are applying to this scheme are required to take Japanese language courses before and after coming to Japan (6 months each) and to take training courses for nursing/long-term care at designated health care facilities. Those who fulfil both Japanese language courses and nursing/long-term care training may then take the respective national exam. In 2016, 447 took the national exam for nursing and 65 (14.5%)

passed the national exam (national average: 88.5%) (Ministry of Health, Labour and Welfare, 2017d). 209 took the national exam for certified care worker and 104 (49.8%) passed the national exam (national average: 72.1%)

4.2.3 Training of health workers

Physicians

Medical training in Japan is an undergraduate course, which involves six years in medical school after graduating from senior high school. Those who pass the national examination then proceed to two years of clinical training, after which they are included in the medical register. In 2017, 8533 students passed the national examinations. Physicians are free to choose where to work, and decisions about where to provide clinical training are made by matching physicians and venues using an algorithm.

Postgraduate clinical training after medical school became mandatory in 2004, and training facilities for doctors in the initial stages of their career have changed greatly. In 2003, about 70 % of new doctors were trained at university hospitals, and about 40% of them were trained in a single specialist department affiliated with a university. Only a few trainees received more general training from a broader rotation. Since 2004, the number of clinical training hospitals other than university hospitals has grown to comprise more than half of all training facilities.

In 2015, there were 11 052 clinical training facilities in 1023 hospitals (1410 training programmes), and a total of 8687 newly registered physicians were matched to the training programme (Ministry of Health, Labour and Welfare, 2017o). The number of training slots is far greater than the number of applicants, and trainee physicians are likely to be concentrated in urban areas. Therefore, adjustments such as setting an upper limit on the numbers recruited in individual prefectures have been in operation since 2010 (Ministry of Health, Labour and Welfare, 2017o).

Dentists

Dentists follow a 6-year course at dental school after graduating from senior high school. Although most of these schools were private before Second World War, dental schools were established at three national universities in 1965. The quota on the number of students in 2016 was 2459 at 29 schools in 27 universities (Ministry of Education, Culture, Sports, Science and Technology, 2017b). The number passing the national dental practitioners' examination was 2025 in 2014. At least one year's

worth of clinical postgraduate training has been mandatory since 2006. In 2014, there were 2428 clinical training facilities with a quota of 3603 newly-graduated dentists, which was much higher than the number of newly graduates (Ministry of Health, Labour and Welfare, 2017b).

Pharmacists

The career path for pharmacists used to be a 4-year degree course provided by a university pharmaceutical department, followed by a national examination. Students proceeding to graduate school could take a 2-year master's courses followed by a 3-year doctoral courses. However, with increased social concern about pharmacological education due to recent advances in medical technologies and the separation of dispensaries from medical practice, the course term was extended to six years and doctoral courses to four years. There are still some 4-year pharmacology courses for those wanting to gain a basic knowledge of pharmacology (eligibility for a national examination is limited to 6-years course graduates). In many cases, graduates in four-year pharmacology courses work in research and development at pharmaceutical companies and universities. In 2015, 73 universities provided programmes to a total of 13 034 students (11 455 for the 6-year and 1589 for the 4-year courses). In 2016, 11 488 students passed the national pharmacists' examination (Ministry of Health, Labour and Welfare, 2016g).

Nurses

As shown in Fig. 4.9, there are a variety of different education routes leading to a nursing qualification, from 3-year nursing school to 4-year bachelor programmes at a university after graduation of high-school, and there is another route for assistant nurse to pursue 2-year bridge course to apply nursing licensure. The number of universities providing nursing education has increased greatly from 11 universities recruiting 558 students in 1991 to 218 universities recruiting 17 878 students in 2013 (Ministry of Health, Labour and Welfare, 2014d). All courses include the minimum required hours of clinical training. Of the 45 784 nurses who passed the national examination in 2008, 9488 (20.7%) had graduated from universities or colleges (Ministry of Education, Culture, Sports, Science and Technology, 2009). In order to prevent early turnover of new graduate nurses, improving the quality of nursing and securing medical safety, facilities have been encouraged to make efforts to provide clinical training to new graduate nurses since 2010 based on an amendment to the Act on Public Health Nurse, Midwives and Nurses and Act on Assurance of Workforces of Nurses and Other Medical Experts (Ministry

of Health, Labour and Welfare, 2017u). The MHLW in collaboration with other stake holders develops and provides guidelines to the facilities as support.

Recently, the MHLW introduced “Integrated Community Care System (ICCS),” which is a comprehensive system at the community level that integrates prevention, medical services, and long-term care while also providing living arrangements and social care (see more details in Chapter 6). In this new system, nurses are expected to be a catalyst of health-care, long-term care and welfare within respective community, and to provide seamless care (from prevention to palliative care) to the elderly or person in need of support.

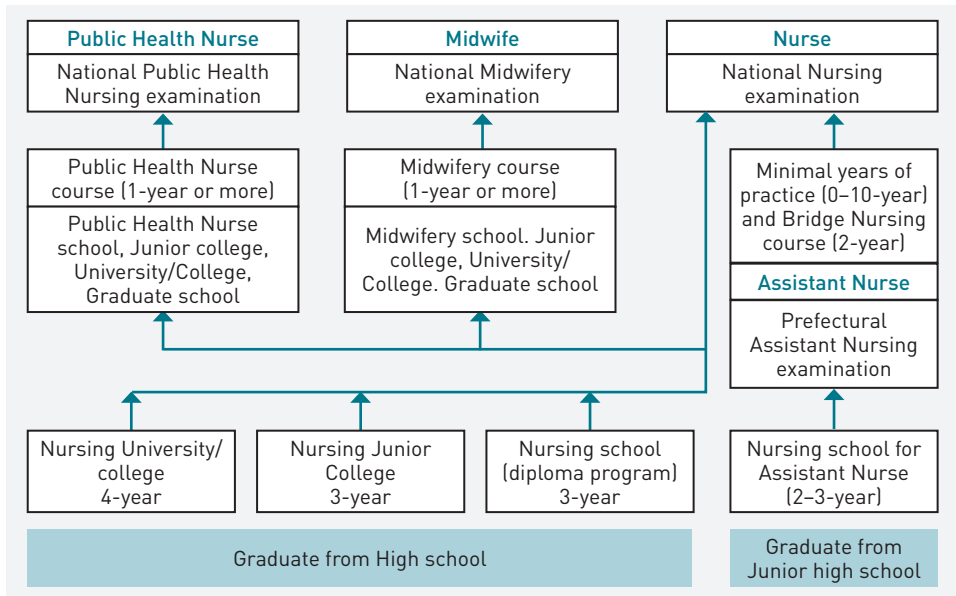
Public Health Nurses (PHN)

PHN training requires an additional year of training for nurses, so there are no PHNs without nurse licensure. This training has been combined with nursing training at the bachelor’s or master’s level program since 2016. There were 268 training institutions ranging from Public Health Nursing schools to graduate schools with a total of 20 753 student capacity in 2016 (Japanese Nursing Association Publishing Company, 2016).

Midwives

Similar to PHN, midwives are required to take one additional year of training. Some courses have been held at the master’s level since 2016. A total student capacity was 10 089 in 201 schools ranging from midwifery schools to graduate schools in 2016 (Japanese Nursing Association Publishing Company, 2016).

Fig. 4.9 Basic nursing education courses



Source: Japanese Nursing Association, 2016, modified by the authors

Certified care workers (nationally qualified)

Certified care worker is defined as a person who provides personal care necessary for daily living including bathing and cooking, and also provides care guidance to the person in need (i.e., elderly and disabled) and caregivers. They can also conduct sputum suction and tube feeding under physicians’ instruction. There are two primary ways to become a nationally qualified care worker:

1. At least three years of working experience at a nursing home or other equivalent facility.
2. 1 or 2 years of care working at a training facility

Those who fulfil either of the above qualification then need to take both a knowledge examination and a practical skill examination.

4.2.4 Doctors’ career paths

The majority of licensed physicians work in hospitals. In 2014, of the 311 205 licenced physicians, 296 845 (95.4%) were practicing; 142 655 (45.8%) worked in hospitals not attached to medical educational institutions, 52 306 (16.8%) in hospitals attached to medical educational institutions and 101 884 (32.7%) in clinics (Ministry of Health, Labour and

Welfare, 2014c). The proportion of women physicians was around 20.4% in 2016 and this proportion has been steadily increasing over time. There have been more physicians working in non-teaching hospitals than in clinics since 1986. The largest age group in each setting was comprised of those aged 30–39 years in hospitals and those aged 50–59 years in clinics. The mean age was 46.2 years in non-teaching hospitals, 38.7 years in teaching hospitals and 59.2 years in clinics.

The career path for physicians is in transition because of the introduction of mandatory postgraduate clinical training in 2004, and the introduction of a new specialty board certification system starting in 2018. Before 2004, physicians were trained at universities from which they obtained a graduate diploma. The clinical departments of medical schools, called “*ikyoku*” controlled the appointment of physicians, and individual physicians had a very limited choice in selecting which hospital they would work in (Otaki J, 1998). After the introduction of mandatory post-graduate clinical training in 2004, young physicians become able to freely choose their working placement, and they shifted to hospitals not attached to medical educational institutions.

Extensive review of the specialty board certification system has been conducted recently. Before this revision, the evaluation or approval of specialists was organized by academic societies (not nationally qualified) and provided specialty board certification for physicians fulfilling certain criteria. However, this independent accreditation process caused some problems, including a lack of uniform standards and gaps in understanding between physicians and citizens about the skills required for specialists. The MHLW has established a commission to investigate medical specialties and propose revisions to requirements for specialization. In the report published in 2013 (Ministry of Health, Labour and Welfare, 2013a), recommendations included the establishment of a uniform system for approval of specialists, evaluation/approval of training programmes, and a possible two-step system in which physicians acquire qualifications in more basic fields and then acquire further qualifications in sub-specialties. The commission has also proposed adding general practice/family medicine as an area for general certification so that these physicians provide appropriate primary care and continuous medical care for a wide range of common diseases (Ministry of Health, Labour and Welfare, 2013a). In total, 19 basic areas of board certification were established. Under this system, 7791 were recruited as clinical fellow starting FY 2018 as of 15 December 2017.

This new uniform system was planned to start in April 2017; however, it has not reached consensus among stakeholders and is now postponed to start in April 2018. The major concerns included the fact that (All Japan Hospital Association, 2015) programs needed for board certification are conducted at university hospitals or other, large hospitals, which may affect health care system in rural areas. Japan Medical Association (JMA) and Council of four hospital organization emphasizes the importance that the new system does not accelerate maldistribution of physicians, while respects professional autonomy and divers ways of working among physicians.

4.2.5 Other health workers' career paths

Nurses

The majority of midwives, nurses and assistant nurses were working in hospitals in 2016: 22 707 midwives (63.5%), 829 488 nurses (72.2%), and 130 859 assistant nurses (40.5%). More than half of all public health nurses, 28 509 (55.6%), were working for the municipal government (Ministry of Health, Labour and Welfare, 2016m).

There are several types of credentialing systems. JNA established nursing credentials in the 1990s; 1. Certified Nurse Specialist (CNS), 2. Certified Nurse (CN) and 3. Certified Nurse Administrator (CNA) (Table 4.4).

Other than CNS, CN and CNA, debate on newly creating Nurse Practitioner is also on the way. The series of review meetings to discuss the scope of work of nurse practitioner were held in 2010. The review recommended a trial of activities of nurse pertaining for Specified Medical Act who would perform specific medical interventions including relatively invasive medical interventions (Ministry of Health, Labour and Welfare, 2010b, 2017m). Based on this decision, the MHLW conducted a pilot training programme starting in April 2011 followed by a trial project to collect example data between 2011 and 2013. In 2015, a formal training system for nurses to perform specific medical intervention was established, allowing nurses who completed designated training to perform 38 specific medical interventions in 21 categories including temporary medicine administration and several device management (Ministry of Health, Labour and Welfare, 2017m). This new system of nurse practitioner is now expected to be an effective way to promote task-shifting from physicians to other health-care professionals so as to enhance an effectiveness of health-care procedures as well as to mitigate high working burden of health-care professionals.

Table 4.4 Credentialing System by Japanese Nursing Association

Title	Total Number	Roles	Entry requirement	Field
Certified Nurse Specialist	1883 (as of Dec. 2016)	1. Excellent nursing practice, 2. Consultation with care providers, 3. Coordination among the concerned parties, 4. Ethical coordination to protect the rights of individuals, 5. Education to improve nursing care, and 6. Research to develop and explore nursing skills and knowledge	Nurses with licensure and at least 5-year practice experience go to master's degree course for CNS, followed by certification examination	11 (cancer, Child Health, Chronic care, Community Health, Critical care, Family Health, Gerontological, Home care, Infection control, Psychiatric Mental Health, and Women's health)
Certified Nurse	19 728 (as of July. 2017)	1. Nursing practice at high level, 2. Instruction of nurses, and 3. Consultation with nurses	Nurses with licensure and at least 5-year practice experience go to designated training course with over 615 hours (6-month) followed by certification examination	21 (Breast Cancer, Cancer Chemotherapy, Cancer Pain Management, Chronic Heart Failure, Chronic Respiratory, Dementia, Diabetes, Dialysis, Dysphagia, Emergency, Infection Control, Infertility, Intensive Care, Neonatal Intensive Care, Palliative Care, Paediatric Emergency, Perioperative, Radiation Therapy, Stroke Rehabilitation, Visiting, Wound, Ostomy and Continence)
Certified Nurse Administrator	3328 (as of July 2017)	Contributes to health and medical welfare by providing high quality systematic nursing services to individuals, family members and local residents with diverse health care needs.	Nurses with licensure and at least 5-year practice experience have mixture of training and administrating experience followed by certification examination	-

Note: all certifications are required to renew every five years.

Source: Japanese Nursing Association, 2017

Dentists

As of 2012, the number of dentists working in medical facilities was 99 659 (97.2% of the total number of licenced dentists), which was an increase of 0.9% over the previous count. Of those working in medical facilities, 87 112 were working in clinics, 9656 in teaching hospitals, and 2891 in other hospitals. The proportion working in clinics has shown a continuously increasing trend over the past few years. The largest age groups in each setting are those aged 29 years or younger in teaching hospitals, those aged 30–39 years in other hospitals, and 50–59 years in clinics. The mean age is 35.3 years in teaching hospitals, 42.2 years in other hospitals and 51.6 years in clinics.

Pharmacists

As of 2012, there were 153 012 pharmacists (54.6%) working in pharmacies, 52 704 (18.8%) in hospitals and clinics, 5249 (1.9%) in universities, 45 112 (16.1%) in pharmaceutical companies, 6443 (2.3%) in public health administration, and 17 517 (6.3%) for other employers. Although there were almost an equal number of pharmacists working in pharmacies and in hospitals/clinics in 1990, the number working in pharmacies has increased, whereas the number working in hospitals and clinics has tended to remain stable since 1996.

4.2.6 Dual practice

According to the National Public Service Act of 1947 and Local Public Service Act of 1950, civil officials may not act as executives or advisers for commercial companies, or run any commercial company. Subsidiary businesses may, however, be allowed if specific permission is sought and approved. If permission is obtained, health-care practitioners in Japan are permitted to work privately either within or outside their public sector workplace, and either outside or within their scheduled public sector hours of work (García-Prado A et al., 2011). The Act sets out that the business should not have links to the government-related department and should not cause a conflict of interest in carrying out official duties. Executives (administrative director, administration officers and supervisors) and heads of hospitals, whose official responsibilities are considered very important, are not permitted to run any commercial companies. This is the entire extent of allowable dual practice in Japan.

5 Provision of services

Chapter summary

The current health-care service delivery system was established just after the Second World War, in parallel with the universal health insurance system. In this system, the predominant focus was the control of communicable diseases, and maternal and child health care; the municipal government, public health nurses and local health volunteers played a major role in service delivery.

In the 1960s, Japan experienced a rapid decrease in the incidence of tuberculosis and, at the same time, an increased mortality resulting from stroke. This was a key motivation for the Central Government to strengthen health promotion activities to prevent and control noncommunicable diseases (NCDs). NCDs remains a leading cause of death in Japan and under the Medical Care Act of 1948, each prefectural government is required to create a “Medical Care Plan” that enables everyone to have quality access to prevention and treatment for cancer, stroke, cardiovascular diseases, diabetes mellitus and mental health diseases. Moreover, under the Health Promotion Act of 2002, each prefecture is also required to create a “Health Promotion Plan” in accordance with local circumstances.

Japan’s population is ageing rapidly, largely due to a long life-expectancy and low birth rate. Mitigating the effects of population ageing requires a sustainable approach to long-term care systems for the elderly. The proportion of older people (age 65 years or older) in the total population was 27.3% in 2016, and it is expected that this proportion will reach 39.4% in 2055. As a result of the post-War baby boom, the population of those aged 75 years and older is expected to reach its peak in 2025. In response to the challenges posed by a rapidly ageing population, the Japanese Government introduced the LTCI system in 2000 and the Integrated Community Care system (ICCS) in 2006, both aim to create by 2025 an environment in which the elderly can live with dignity with sufficient social support. These policies remain the central tenet of the Japanese long-term care strategy. Both health care and long-term care are

provided mostly through privately-owned facilities; however, municipal governments retain the authority over the overall provision and financing of these services based on the oversight of the Central Government.

5.1 Public health

Public health activities in Japan are governed by the Community Health Act, which was passed in 1947 (Government of Japan, 1947a). This Act sets out the responsibilities of municipalities, prefectures and the national government in protecting public health. It describes organizations responsible for delivering public health services, and aims to better manage public health as Japan comes to the final stage of its demographic transition.

5.1.1 Communicable disease control functions

In 1997, the Infectious Disease Surveillance Center (IDSC) was established under the National Institute of Infectious Diseases (NIID) (National Institute of Infectious Diseases, 2017). The IDSC is responsible for surveillance of all targeted infectious diseases, which are divided into five categories according to urgency of notification and severity. Based on the *Infectious Disease Control Law* enacted in 1995, the IDSC conducts nationwide surveillance of infectious diseases by collecting reports on the detection of infectious agents from prefectural public health institutions. The Center also collects reports on incidents of infectious diseases from sentinel clinics and hospitals across Japan. This information is publicly reported on a weekly or monthly basis.

Target diseases of the Infectious Diseases Control Law

The five categories of infectious diseases, defined in terms of both urgency of notification and severity, are listed below (as of February 2017) (Ministry of Health, Labour and Welfare, 2017q).

Category I (all cases to be notified promptly after diagnosis): Crimean–Congo haemorrhagic fever; Ebola haemorrhagic fever; Lassa fever; Marburg disease; Plague; South American haemorrhagic fever; and smallpox

Category II (all cases to be notified promptly after diagnosis): acute poliomyelitis; tuberculosis; diphtheria; severe acute respiratory syndrome (SARS); Middle East respiratory syndrome (MERS); avian influenza (H5N1, H7N9)

Category III (all cases to be notified promptly after diagnosis): cholera; shigellosis; enterohaemorrhagic *Escherichia coli* infection; typhoid fever; and paratyphoid fever

Category IV (all cases to be notified promptly after diagnosis): anthrax; avian influenza virus infection (except H5N1, H7N9); botulism; brucellosis; chikungunya fever; coccidioidomycosis; dengue fever; echinococcosis; Eastern equine encephalitis; epidemic typhus; hantavirus pulmonary syndrome; haemorrhagic fever with renal syndrome; glanders (*Burkholderia mallei*); *Handra virus* disease; hepatitis A; hepatitis E virus infection; Japanese encephalitis; Japanese spotted fever; Kyasanur forest disease; melioidosis (*Burkholderia pseudomallei*); legionellosis; leptospirosis; lyme disease; lyssavirus infection (excluding rabies); malaria; monkeypox; *Nipah virus* infection; Omsk haemorrhagic fever; psittacosis; Q fever; rabies; relapsing fever; Rift Valley fever; Rocky Mountain spotted fever; scrub typhus (tsutsugamushi disease); severe fever with thrombocytopenia syndrome (SFTS); tick-borne encephalitis; tularaemia; Venezuelan equine encephalitis; Western equine encephalitis; West Nile fever (including West Nile encephalitis); yellow fever; *Zika virus* disease.

Category V

- a. Diseases to be notified by all physicians within 7 days of diagnosis (rubella and invasive meningococcal disease are exceptions and are required to be reported promptly after diagnosis)

Acquired immunodeficiency syndrome; amoebiasis; acute encephalitis (excluding encephalitis listed in category IV); carbapenem-resistant *Enterobacteriaceae* (CRE); chickenpox (limited to hospitalized cases); congenital rubella syndrome; Creutzfeldt–Jakob disease; cryptosporidiosis; disseminated cryptococcal disease; giardiasis; invasive *Haemophilus influenzae* disease; invasive meningococcal disease; invasive pneumococcal disease (IPD); measles; rubella; multiple drug-resistant *Acinetobacter* (MDRA); severe invasive streptococcal infections (streptococcal toxic shock-like syndrome); syphilis; tetanus; vancomycin-resistant *Enterococcus* infection; vancomycin-resistant *Staphylococcus aureus* infection; viral hepatitis (excluding hepatitis A and E)

- b. Diseases to be reported by sentinel clinics and hospitals
- Influenza sentinel: influenza (excluding avian influenza virus infection)

- Paediatric disease sentinel: chickenpox; erythema infectiosum; exanthem subitum; Group A streptococcal pharyngitis; hand, foot and mouth disease; herpangina; infectious gastroenteritis; mumps; pertussis; pharyngoconjunctival fever; respiratory syncytial virus infection
- Eye disease sentinel: acute haemorrhagic conjunctivitis; epidemic keratoconjunctivitis
- Sexually transmitted disease (STD) sentinel: condyloma acuminatum; genital chlamydial infection; genital herpes; gonorrhoea
- Hospital sentinel: aseptic meningitis; bacterial meningitis; chlamydial pneumonia (excluding psittacosis); infectious gastroenteritis (limited to rotavirus); mycoplasmal pneumonia; methicillin-resistant *Staphylococcus aureus* infection; multi-drug-resistant *Pseudomonas aeruginosa* infection; penicillin-resistant *Streptococcus pneumoniae* infection.

Food safety

Physicians are required by the *Food Sanitation Act* to report suspicious food poisoning cases to a local health centre (or any other equivalent institutions). Staff from local health centres then conduct interviews with patients and/or audit facilities that are suspected to be linked to cases of food poisoning. Based on the report from local health centre staff, the local government or health centre takes measures to prevent the further spread of food poisoning.

The International Health Regulations (IHR) set by WHO are an international legal instrument that is binding on 196 WHO member states and aims to help the international community prevent and respond to acute public health risks including food poisoning. According to the IHR, once the MHLW identifies an event of food poisoning, it must assess the public health risks of the events within 48 hours. If the event is determined to be notifiable under the IHR, then the MHLW must report the information to the WHO within 24 hours.

5.1.2 Environmental disease control functions

In the 1960–70s, Japan experienced several environmental pollution-related diseases outbreaks, including Minamata disease (methyl mercury poisoning), Itai-itai disease (cadmium poisoning) and Yokkaichi asthma (Table 5.1). In the process of addressing these environmental diseases

outbreaks, the Government of Japan created several countermeasures against future environmental diseases incidents.

Table 5.1 List of major environmental diseases in Japan

Name of disease	Symptoms	Cause of disease	Health and economic consequences
Yokkaichi asthma	Severe Asthma	Industrial pollution	1140 patients (estimate)
Itai-itai disease	Chronic Cadmium poisoning	Cadmium	200 persons are legally designated as victims
Minamata disease	Organic Mercury intoxication	Methylmercury	3000 patients (estimate)

Source: Compiled by the authors based on (Ministry of the Environment, 2012; Yokkaichi city, 2006)

Notably, an environmental agency was established in 1971 in response to these disasters; this agency was later expanded to the Ministry of the Environment in 2001. The overall history of pollution countermeasures is listed in Table 5.2.

Table 5.2 History of pollution countermeasures

1960s	<ul style="list-style-type: none"> • Basic Law for Environmental Pollution Control (1967) • Air Pollution Control Act (1968)
1970s	<ul style="list-style-type: none"> • Water Pollution Prevention Act (1970) • Establishment of Environmental Agency (1971)
1980s - 1990s	<ul style="list-style-type: none"> • Law Concerning Special Measures for the Conservation of Lake Water Quality (1984) • Automobile NOx Law (1992) • Environment Basic Law (1993)
2000s -	<ul style="list-style-type: none"> • Inauguration of the Ministry of the Environment (2001) • Automobile NOx PM Control Law (2001)

Note: Air Pollution Control Act, Water Pollution Prevention Act and Law Concerning Special Measures for the Conservation of Lake Water Quality have been amended many times.

Source: Compiled by the authors.

Fukushima Daiichi Nuclear Power Plant Accident in 2011

The devastating magnitude 9.0 Great East Japan Earthquake and Tsunami struck north-eastern Japan on March 11, 2011, followed by the Fukushima Daiichi Nuclear Power Plant Accident. Several countermeasures were undertaken by Fukushima prefecture and the Japanese government including radiation protection of workers (decontamination process and removal of debris), water and food safety (radiation monitoring), and health check-ups for people living in Fukushima prefecture (including thyroid cancer screening). As of November 2017, there are some restrictions for entering or living in 12 municipalities in Fukushima, and 54 579 people are still evacuated (Fukushima Prefectural Government, 2017).

Following the accident, health threats have arisen in radiation-contaminated areas (particularly Fukushima Prefecture), and cumulative dose from external and internal radiation exposure remains a major public concern (Brumfiel G et al., 2011). Contrary to the concern, dosage levels attributed to the Fukushima incident have been low due to the natural weathering process and the success of contaminated food control (Hayano RS et al., 2013; Tsubokura M et al., 2012; Tsubokura M et al., 2015; Tsubokura M et al., 2014). The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) and WHO have concluded that the predicted risk of lifetime cancer is very low in the general population with the exception of the most exposed infants and children in Fukushima. In these most exposed individuals, thyroid cancer cases exceeding the norm were estimated by model calculations, although this remains difficult to verify in practice because thyroid cancer is a rare disease (United Nations, Scientific Committee on the Effects of Atomic Radiation Annex A, 2014; World Health Organization, 2013).

Since the Fukushima accident, the central government has been regularly measuring radioactive contamination levels in farm and marine products. Simultaneously, the government set safety standards for radioactive cesium in food in April 2012: the upper limit for radioactive cesium in general food products is 100 becquerels per kilogram, which is more than 10 times stricter than the European Union standard. According to the agriculture ministry, 329 833 food items were inspected in fiscal year 2016, and 99.8% of farm products had cesium of less than 25 becquerels per kilogram (Ministry of Agriculture, Forestry and Fisheries, 2017). The tests showed that 450 items, or 0.2% of the total, had cesium exceeding

the upper limit, all of which were wild mushrooms, game meat, and freshwater fish, so-called ‘hard-to-control items.’

In contrast to the likely low risk of radiation-related health consequences, non-radiological, year-long health effects after the accident have been reported, including elevated markers of metabolic risk, increased prevalence of diabetes and hyperlipidaemia, and increased prevalence of psychological distress (Nomura S et al., 2016; Satoh H et al., 2015; Yabe H et al., 2014).

5.1.3 Surveillance of population health and well-being

The MHLW conducts several surveys related to health care and long-term care. Table 5.3 show the comprehensive list of surveys done by the MHLW (the MHLW also conducts surveys related to labour and welfare, which are not included in this table).

Table 5.3 List of statistical surveys conducted by the MHLW

Responsible Division	Title of Statistical Survey
Director-General for Statistics and Information Policy	
Examination and Analysis Office	Survey on Input-Output Structure
Vital, Health and Social Statistics Office	Vital Statistics
	Report of Vital Statistics; Occupational and Industrial Aspects
	Life Tables
	Specified Report of Vital Statistics
	Report on Public Health Administration and Services
	Report on Regional Public Health Services and Health Promotion Services
	Report on Social Welfare Administration and Services
Health Statistics Office	Patient Survey
	Patient’s Behaviour Survey
	Survey of Medical Institutions
	Hospital Report
	Survey of Physicians, Dentists and Pharmacists
	Estimates of National Medical Care Expenditure
Social Statistics Office	Survey of Social Welfare Institutions
	Survey of Institutions and Establishments for Long-term Care
	Statistics of Medical Care Activities in Public Health Insurance
	Survey of Long-term Care Benefit Expenditures

Table 5.3 List of statistical surveys conducted by the MHLW (Con't.)

Responsible Division	Title of Statistical Survey
Household Statistics Office	Longitudinal Survey of Newborns in the 21st Century (2001 Cohort)
	Longitudinal Survey of Newborns in the 21st Century (2010 Cohort)
	Longitudinal Survey of Adults in the 21st Century (2002 Cohort)
	Longitudinal Survey of Adults in the 21st Century (2012 Cohort)
	Special Report on the Longitudinal Survey of Newborns in the 21 st Century and the Longitudinal Survey of Adults in the 21 st Century: Ten-Year Follow-up, 2001–2011
	Longitudinal Survey of Middle aged and Elderly Persons
	Comprehensive Survey of Living Conditions
Health Policy Bureau	
Regional Medical Care Planning Division	Survey on No-doctor districts
	Japan Nosocomial Infections Surveillance
Dental Health Division	Survey of Dental Diseases
	Survey on No-Dentist Districts
Nursing Division	Survey on Admissions into Nurse Schools and Work Statuses of Graduates
Economic Affairs Division	Statistics of Production by Pharmaceutical Industry
	Statistics on Pharmaceutical and Medical Device Industry
	Drug Price Survey
	Price Survey on Special Treatment Materials
Health Service Bureau	
General Affairs Division	Fact-Findings Survey on Atomic Bomb Victims
Health Service Division	National Health and Nutrition Survey
	Survey on Public Health Nurses' Activity
Pharmaceutical Safety and Environmental Health Bureau	
Inspection and Safety Division	Meat Inspection and Other Information Return Survey
Equal Employment, Children and Families Bureau	
General Affairs Division	Survey on Children in Children's nursing home's
	Nationwide Survey on Fatherless Families
	Nationwide Survey on Families and Children
	National Nutrition Survey on Preschool Children
	National Growth Survey on Preschool Children
	Survey of Regional Child Welfare Services
Social Welfare and War Victims' Relief Bureau	
General Affairs Division	Current Status Survey on Welfare Offices

Table 5.3 List of statistical surveys conducted by the MHLW (Con't.)

Responsible Division	Title of Statistical Survey
Public Assistance Division	Survey on Living by Social Security
	National Survey on Public Assistance Recipients
	Fact-finding Survey on Medical Assistance
	Survey on Mother-Children Households that Receive Public Assistance
	Survey of Lifestyle Value and Actual Living Conditions
Community Welfare and services division	Survey on the Actual Status of Consumers' Cooperative Societies
	National Survey on the Actual Conditions of the Homeless
Policy planning division, department of health and welfare for persons with disabilities	Survey on Persons with Physical Disability
	Survey on Persons with Intellectual Disability
Welfare Division for Persons with Disabilities	Fact-finding Survey on Economic Conditions of Welfare Services for Persons with Disability
	Survey on Working Conditions of Social Worker for Persons with Disability
	Report on Benefits Project of Independence Support for Persons with Disability
Mental health and disability health division	Survey on the Situation of Certification for Classification of Degree of Disability
Health and Welfare Bureau for the Elderly	
Division of the Health for the elderly	Fact-finding Survey on Economic Conditions in Long-term Care (LTC)
	Briefing Survey on Economic Conditions in Long-Term Care
	Fact finding Survey on Long-Term Care for the Elderly
	Survey on Working Conditions of Long-Term Care Workers
	Fact-finding Survey on Project of Long-Term Care
Health Insurance Bureau	
Medical Economics Division, Actual Research Division	Survey on Economic Conditions in Health Care (Survey on Health Care Facilities)
Medical economics division	Survey on Charge for Dental Technique
	Survey on Usage of Insurance-Covered Medical Materials
	Survey on Home-Visit Nursing Care-Expenses
	Survey for Evaluation of Dentistry Medical Fee
Actual research division	Survey on the Trend of Medical Care Expenditures
Director-General for General Policy and Evaluation	
Counsellor Office for policy evaluation	Survey on the Redistribution of Income
	Survey for Planning Social Insurance System
The National Institute of Population and Social Security Research	
The National Survey on Migration	

Table 5.3 List of statistical surveys conducted by the MHLW (Con't.)

Responsible Division	Title of Statistical Survey
The National Fertility Survey	
The National Survey on Family	
The National Survey on Household Changes	
The National Survey on Social Security and People's Life	

Source: Ministry of Health, Labour and Welfare, 2018b

The National Health and Nutrition Survey

The National Health and Nutrition Survey is conducted every year, based on the Health Promotion Act, 2002 (Government of Japan, 2002). The aim of the survey is to ascertain the actual state of health, food intake, nutritional intake, and lifestyles of the Japanese people. The survey provides data on the prevalence of lifestyle-related diseases, physical activity and exercise, dietary habits, smoking habits, obesity and underweight, and energy/vegetable intake (data as of 2016) (Ministry of Health, Labour and Welfare, 2016o).

The participants are household members aged 1 year and over who live in the survey district. In 2016, there were 462 survey districts and 24 187 total households within all districts.

Here are key findings from the 2016 survey.

1. The number of “persons in whom diabetes is strongly suspected (HbA1c \geq 6.5 or currently under treatment)” and the number of suspected (as yet undiagnosed) cases (6.0 \leq HbA1c<6.5) were 10 million each. Suspected cases started increasing in 1997 and began to decrease in 2007.
2. There was significant variation among the 47 prefectures in terms of status regarding physical condition, diet and lifestyle. The highest quintile and the lowest quintile among prefectures had a BMI difference of 0.9 for males and 1.2 for females while the difference in vegetable intake was 59g/day in males and 60g/day in females.
3. The passive smoking rate remains high at 42.2% in restaurants and bars, followed by 34.3% in entertainment venues, 30.9% in the workplace, and 30.5% on the street.

Comprehensive Survey of Living Conditions

The Comprehensive Survey of Living Conditions is conducted every year. The purpose of this survey is to investigate people's living conditions,

including health, medical care, welfare, pension and income (Ministry of Health, Labour and Welfare, 2016d). This survey started in 1986 having integrated four series of survey undertaken previously: Comprehensive survey on welfare administration (1953-1985); National health survey (1953-1985); General survey on living conditions (1962-1985); and Public health survey (1963-1985). Since then, a large-scale survey has been conducted every third year while a small-scale survey has been conducted during each interim year. The survey consists of five questionnaires: household questionnaire, health questionnaire, long-term care questionnaire, income questionnaire and savings questionnaire.

For the largescale survey, the following sampling was done:

- Household questionnaire and health questionnaire: whole households (about 290 000 households) and household members (approximately 710 000 persons) in Japan who were sampled in 5410 districts randomly selected from the National Census in 2010.
- Long-term care questionnaire: persons requiring care under LTCI (approximately 8000 persons) in 2446 districts from the above 5410 districts in 2010.
- Income questionnaire and savings questionnaire: whole households (about 30 000 households) and household members (approximately 80 000 persons) in 1963 districts from the above 5410 districts above.

As to the small-scale survey, household questionnaires covered whole households (about 59 000 households) and household members (approximately 140 000 persons) that were randomly sampled in 1106 districts from the National Census in 2010. Income questionnaire covered whole households (approximately 9000 households) and household members (approximately 23 000 persons) in 500 districts from the former 1106 districts. The latest small-scale survey was conducted in 2015.

All statistics below are from the large-scale survey conducted in 2016⁴ (Ministry of Health, Labour and Welfare, 2016d).

1. Subjective symptoms

The proportion of people with subjective symptoms (complainant ratio) was 305.9 per 1000 population. The ratio for women (337.3) was higher than that for men (271.9). The ratio was lowest for those aged

4 Excluded data from Kumamoto prefecture because of huge earthquake happened in April, 2016

10–19 years (166.5). The number rose with age group, reaching 520.2 for those aged 80 years and above. Among men, lower back pain had the highest complainant ratio, followed by shoulder stiffness and cough or sputum. Among women, shoulder stiffness had the highest complainant ratio, followed by lower back pain and joint pains in the hands and feet.

2. Health-care utilization

The proportion of people receiving health-care services was 390.2 per 1000 population. The figure for women (406.43) was higher than that for men (372.5). It was lowest for those aged 10–19 years (141.1). A higher proportion was associated with higher age, reaching 730.3 for those aged 80 years and above. Among male respondents, high blood pressure had the highest outpatient ratio, followed by diabetes and dental diseases. Among women, high blood pressure had the highest outpatient ratio, followed by ophthalmological disease and dental diseases.

3. Attendance for health check-ups and medical check-ups

Overall, 72.0% of men and 63.1% of women respondents aged 20 years or above reported attending a health check-up, with the highest proportion of attendances seen in 50–59 year-old men (79.9%), and 50–59 year-old women (71.0%).

Patient Survey

The patient survey is conducted once every three years. The purpose of this survey is to obtain basic data for health policy by identifying the situation of patients who use hospitals and clinics including their attributes, condition at the time of visit or admission, diagnosis, and an estimate of the number of patients in Japan by region (Ministry of Health, Labour and Welfare, 2017n). In the latest survey, investigators selected 6402 inpatient hospitals, 3363 outpatient hospitals, 5893 general clinics, and 1278 dental clinics (the survey was conducted at hospitals on one designated date set for each hospital from three days during 21st – 23rd October 2014, and at clinics on one designated date set for each clinic from 21st, 22nd and 24th October 2014).

1. Estimated number of patients (per day) by sex and age

Table 5.4 Estimated number of patients per day by sex and age (unit: thousands person)

Inpatient (total 1318.8)		Outpatient (total 7238.4)	
By sex			
Male	603.8	male	3131.0
Female	715.1	female	4107.3
By age			
≤65	937.3	≤65	3510.2
≤75	669.4	≤75	1895.1

Source: Ministry of Health, Labour and Welfare, 2014b

The estimated number of patients per day who received medical treatment in Japan was 1 318 800 inpatients and 7 238 400 outpatients. Of the inpatients, 603 800 were men and 715 100 inpatients were women; 937 300 inpatients were 65 years or older and among them, 669 400 inpatients were 75 years or older. Among outpatients, 1 641 900 patients visited hospitals, 4 233 000 visited general clinics, and 1 363 400 visited dental clinics. Among them, 3 131 000 patients were men and 4 107 300 patients were women. 3 510 200 patients were 65 years or older, and 1 895 100 were 75 years or older.

2. Estimated number of patients (per day) by disease and injury

Table 5.5 Estimated number of patients by diseases and injury (unit: thousands person)

Inpatient			Outpatient		
1	Mental and behavioural disorders	265.5	1	Diseases of the digestive system	1310.0
2	Diseases of the circulatory system	240.1	2	Diseases of the circulatory system	933.0
3	Neoplasms	144.9	3	Diseases of the musculoskeletal system and connective tissue	877.8

Source: Ministry of Health, Labour and Welfare, 2014b

The major diseases requiring hospitalization included mental and behavioural disorders (265 500 inpatients), diseases of the circulatory system (240 100), and neoplasms (144 900).

The major diseases requiring outpatient care included diseases of the digestive system (1 310 000), diseases of the circulatory system (933 000), and diseases of the musculoskeletal system and connective tissue (877 800).

3. Home medical care

The estimated number of outpatients who received home medical care on the date of survey was 156 400. 34 000 received “on-call” visits (emergency visit), 114 800 received “home visit consultations” (scheduled visits), and 7600 received “home visit by person other than physicians or dentists”.

Vital statistics

Japan has a comprehensive vital registration system, with 99.9% of deaths recorded in this system. Recording of vital statistics started in AD 646 in Japan as part of the family registry history. Under the *Family Registration Law* in 1898, a modern family registration system was introduced in Japan in 1899. The purpose of vital statistics is to collect vital events and obtain a basic data source for the population and policy-making on health, labour and welfare. Subjects of the survey are the total events of live births, deaths, marriages, divorces, and foetal deaths notified. Municipal government heads fill in Vital Statistics Survey Forms based on notifications of live births, deaths, marriages, divorces, and foetal deaths. Detailed numbers are shown in Chapter 1.

5.1.4 Occupational health

Under the Industrial Safety and Health Act in 1972, employers who employ 50 or more workers are required to contract an industrial physician (Government of Japan, 1972; Ministry of Health, Labour and Welfare, 2015a). Industrial physicians are responsible for maintaining the health of all workers and must conduct an on-site inspection of the working conditions to make sure that they are safe and healthy. Industrial physicians are charged with offering professional opinions to employers and managers with regard to safety and health maintenance of the workers.

In general, all employees, regardless of the type of industry, are required to conduct regular health check-ups once a year for their employees. For workers working under special conditions (mainly under hazardous

conditions), additional examinations must be carried out during the health check-ups.

There were 972 deaths due to work-related accidents in 2015, and 116 311 workers left their work for more than 4 days due to work-related accidents in 2015 (Ministry of Health, Labour and Welfare, 2016l). According to the Labour Standard Act in 1947, employers are held responsible for any financial damage caused by work-related accidents (Government of Japan, 1947b). To guarantee financial liability, the MHLW operates the Workers' Accident Compensation Insurance, with insurance premiums paid wholly by employers. This not only covers the medical costs of treatment for diseases and injuries but also pays monetary damages for lost wages and disabilities, plus an annuity for bereaved family members.

Long working hours and mental health of workers are now of great concern. Japan is well known for having long working hours; it has been calculated that the annual average working hours in Japan was 2018 hours in 2013. "Karoshi" or death from overwork is now of great concern. In 2013, 306 cases of cardiac or cerebrovascular disease and 436 cases of mental illness were recognized as being caused by over-work. There were a total of 27 283 suicides that occurred in Japan, of which 2323 were attributed to working conditions (Ministry of Health, Labour and Welfare, 2013e). The survey on state of employees' health of 2012 revealed that 60.9% of employees reported work-related stress. A new program called the Stress Check Program was newly introduced in 2015 to reduce worker stress, that mandates that all workplaces with 50 or more employees conduct a stress survey of individual workers every year and a physician interview to those with high stress.

By responding to concerns about "karoshi," there are now ongoing debates regarding working conditions of health care professionals (karoshi is also seen among physicians). In 2016, the MHLW established a committee for the working environment of health care professionals, considering the dramatically changing demography and health care systems in Japan. The committee proposed the importance of flexibility of working style, optimal allocation of health care resources at the local level, maximum use of health-care technologies, and task-shifting from physicians to other health care professionals (Ministry of Health, Labour and Welfare, 2017p). Based on these recommendations, the MHLW further established a new committee on reform of working environment

for physicians in 2017 and has been debating concrete measures to promote the aforementioned recommendations.

5.1.5 Preventive services

Immunization programmes

Under the Immunization Act, immunization services for 12 diseases started in 1948 and the vaccine schedule was periodically revised until recently. Japan now maintains a childhood vaccination programme that is broadly consistent with the WHO-recommended vaccination schedule (Government of Japan, 1948a). Key elements of Japan's vaccination schedule are listed below (as of February 2017).

(i) Routine immunization

- Live vaccine: bacilli Calmette-Guerin (BCG), measles-rubella (MR), Varicella
- Inactivated vaccine: Hepatitis B, DPT-IPV (diphtheria-tetanus-pertussis and inactivated polio vaccine), Japanese encephalitis, pneumococcal, *Haemophilus influenzae* type b (Hib), human papillomavirus (HPV)

(ii) Non-routine immunization

- Live vaccine: mumps, rotavirus
- Inactivated vaccine: hepatitis A virus, influenza (for the elderly), meningococcus

During the long history of the Japanese vaccination system, vaccine-induced side effect started to be of concern in 1976, and several class action law suits have been taken against the Central and local government since then.

The fear of vaccine-induced side-effects still exist. Despite the inclusion of the measles vaccination in the routine vaccination schedule, some parents still do not vaccinate their children; sporadic outbreaks of measles were observed among college students in 2006 due to weakened herd immunity. To strengthen herd immunity, the combined MMR vaccine was introduced in 2006, and 5-7-year-old children began to receive a second booster vaccination. Efforts have been made to eradicate measles, including supplementary vaccination. Japan was verified as measles-free in 2015 by the WHO Western Pacific Region. Although 159 patients were

diagnosed with measles in 2016, this outbreak was caused by imported cases, Japan retained measles-free status.

Japan is now also experiencing an ongoing outbreak of rubella due to weakened herd immunity (possibly among adult males who were not vaccinated during childhood) and also facing controversy over decision-making regarding the HPV vaccine and the handling of adverse events (Centers for Disease Control Prevention, 2013; Gilmour S et al., 2013). The HPV vaccine has been widely recognized as the most effective measure for preventing cervical cancer, but several adolescents and their family members in Japan have insisted that they experienced neurological symptoms after receiving the HPV vaccination. Although the MHLW and experts concluded that there was no clear association between HPV vaccination and neurological symptoms, the MHLW removed the HPV vaccine from the routine immunization schedule, so the vaccination rate sharply decline from 70% to 1%.

Other challenges are inadequate surveillance system for vaccination rate (vaccination data is collected through municipal government and it largely depends on their data surveillance capacities), increasing number of children who are not vaccinated based on recommended schedule, and disparities of vaccination rate among children exaggerated by socio-economic status of their parents. Improvements in planning, management and oversight of the vaccination programme based on scientific evidence as well as R&D capacity building for developing new vaccinations are required for Japan to properly counter these preventable infectious diseases.

5.1.6 Health promotion and education

The Health Promotion Act was enacted in 2002, which requires prefectural and municipal governments to develop health promotional plans, mandates the National Health and Nutritional Survey, and requires governments at all levels to monitor lifestyle-related diseases for effective health promotion (Ezoe S et al., 2017). The Act also sets out anti-smoking activities, including efforts to fight second-hand smoke exposure.

In response to the demographic and epidemiological transitions (from widely prevalent communicable diseases to chronic and lifestyle-related NCDs), under the Health Promotion Act, the MHLW promoted the “National Health Promotion Movement in the 21st century” (abbreviated

as “Health Japan 21”) as a goal-oriented health promotion measure for the prevention of lifestyle-related diseases (Sakurai H, 2003). “Health Japan 21” emphasizes the prolongation of healthy life expectancy without disabilities (Government of Japan, 2002). Japan faces a growing number of older people with disabilities, and this programme aims to ease the burden on care givers and ambulatory services by promoting healthy ageing. The second term of the National Health Promotion Programme 2013–2022 (Health Japan 21, the second term) is currently in place (Ministry of Health, Labour and Welfare, 2012f).

The fundamental goals are:

- to improve healthy life expectancy and reduce health inequalities,
- to prevent onset and progression of life-style related diseases (cancers, cardiovascular diseases, diabetes and chronic obstructive pulmonary disease),
- to maintain and improve functions necessary for a healthy social life,
- to establish a social environment in which individual health is protected and healthy behaviours are supported; and
- to improve life-style factors affecting health, such as nutrition, physical activity and other risk factors.

Prefectural governments are required by the Health Promotion Act to set targets within a national framework and ensure that these targets are easy for local residents to understand. They should also monitor municipal-level variations in health and lifestyle, while municipal governments should incorporate national and prefectural targets into local policy.

5.1.7 Tobacco control

As shown in Chapter 1, smoking prevalence has been steadily declining in Japan. According to the National Health and Nutritional Survey, smoking prevalence among men decreased from 47.4% in 2000 to 31.4% in 2015, and that for women from 11.5% in 2000 to 8.3% in 2015. The smoking prevalence for women in Japan is lower than that in most developed countries. This decline has been achieved through increases in taxation, implementation of smoking bans in public spaces and public buildings, and the gradual expansion of non-smoking areas in private businesses. However, Japan remains behind other nations in the implementation of measures as defined by the WHO’s Framework Convention on Tobacco Control (i.e., taxation, control measures for passive smoking, smoking

cessation program, bans for tobacco advertisements) (Yorifuji T et al., 2011). Looking ahead to the 2020 Tokyo Olympic and Paralympic Games, the MHLW tried to pass a law that would prohibit indoor smoking at restaurants and bars (size more than 30 mm²) in order to tackle passive smoking, but it failed due to strong opposition from the current ruling party, which is supported by the tobacco industry. Although Japan is ranked at the worst level in terms of tobacco control by the WHO, there has been no further movement toward legislation to prevent passive smoking except in the Tokyo Metropolitan area.

With respect to youth smoking, according to a survey of junior and senior high school students conducted by the government in 2004, smoking prevalence in the past one month was 21.7% in male and 9.7% in female 12th grade students. The prevalence has been decreasing; in 2014, it was 4.6% in male and 1.5% in female students (Ministry of Health, Labour and Welfare, 2015b).

5.1.8 National screening programmes for the whole or part of the population

There are three types of health check-ups targeting the general population in Japan; general health check-ups, specific health check-ups and specific health guidance (SHCSHG), and cancer screening.

General health check-up

All employers are required by the *Industry Safety and Health Act* to provide health check-ups to all employees at the time of contract as well as once every year (Government of Japan, 1972). A general health check-up includes: (1) past medical history and occupation, (2) subjective and objective symptoms, (3) height, weight, vision and hearing, (4) chest X-ray and sputum check, (5) blood pressure, (6) Anaemia (complete blood count), (7) liver function, (8) cholesterol, (9) diabetes mellitus, (10) urine analysis, and (11) ECG. In 2015, mental health check-ups were also made mandatory. All costs are paid by employers; individual workers do not need to pay for check-ups.

Specific health check-ups and specific health guidance (SHCSHG)

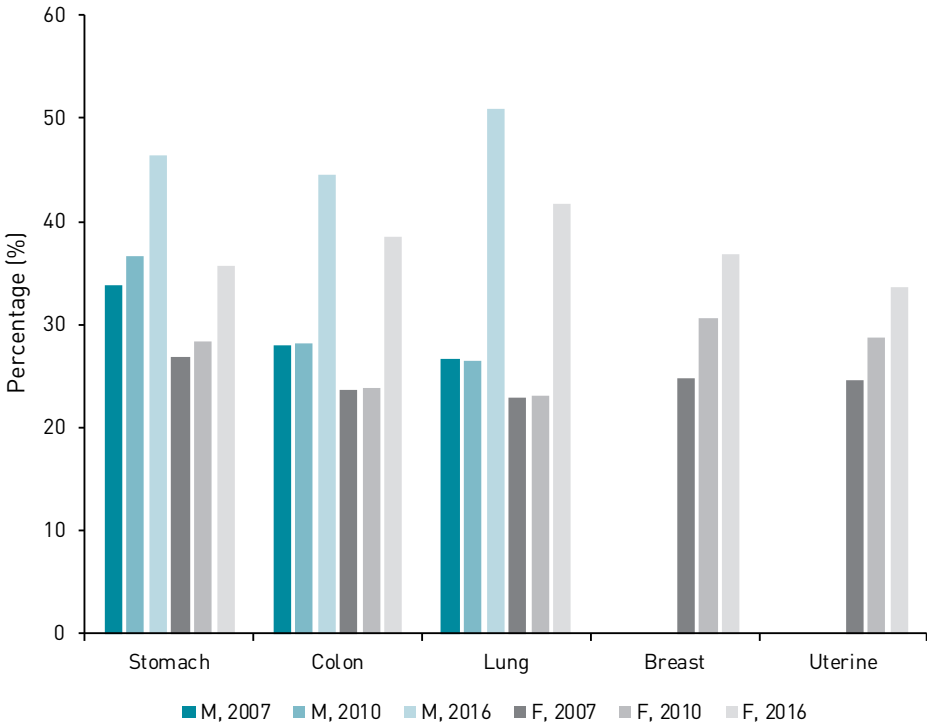
To tackle the increase in NCDs, the MHLW introduced a nation-wide screening programme called the “specific health check-ups and specific health guidance” (SHCSHG) in 2008 (Ministry of Health, Labour and Welfare, 2012a). Under this programme, all insurers are mandated by the “Act on assurance of medical care for the elderly” and the “National Health Insurance Act” to conduct SHCSHG for enrollees aged 40–74

years in addition to the general health check-up. The aim of SHGSHC is to prevent “metabolic syndrome,” a pre-clinical condition that leads to NCDs, including diabetes mellitus (Tsushita K et al., 2011). This programme expands on general health check-up programmes to include a wider range of items and, based on the results, specific health guidelines are offered to the participants identified as having risk factors for lifestyle-related diseases. All costs are covered by insurers; individuals do not need to pay for these check-ups.

Cancer screening

National government subsidization of screening for stomach and uterine cancer began in Japan in 1983, followed by screening for lung, colon and breast cancer. At that time, no other country provided publicly funded cancer screening. Although the rate is still low compared with other industrialized nations, screening rates for men rose to 45.8%, 41.4% and 47.5% for stomach, colon and lung cancer screening, respectively, in 2013 (National Cancer Center Japan, 2017; Tsuji I, 2009).

Fig. 5.1 Cancer screening rate, (Age 40–69)



Source: National Cancer Center Japan, 2017

5.1.9 Maternal and child health

The Maternal and Child Health Act, 1965 is the basis for maternal and child health services in Japan. Infant mortality in Japan used to be as high as 150–160 per 1000 live births until the early 20th century, but declined sharply to below 10 per 1000 live births in 1975. The infant mortality rate of 2.0 per 1000 live births in 2015 is one of the lowest even among developed countries (World Bank, 2018). The maternal mortality rate is also the lowest in the world, at 5 per 100 000 in 2015 (World Bank, 2018).

The Maternal and Child Health Act, 1965 entitles babies to free publicly funded preventive health services, including access to the *Maternal and Child Health Handbook* for parents before birth. Continued guidance and consultation with public health nurses are provided after birth, and publicly funded mass screening for congenital metabolic diseases are also included. Babies born to mothers living with the hepatitis B virus are given free immunoglobulin and vaccination. Additionally, newborns are entitled to well-baby check-ups three times within the first 3 years of life (3–4 months, 18 months, 3 years of age), provided at no cost by the municipal government. The first two of these examinations measures growth, nutritional status, oral health, possible physical and mental development problems, and vaccination history. At 3 years, ophthalmic and ear, nose and throat examinations are included in the check-up. Moreover, most municipalities provide free additional health check-ups for infants and children up to five times.

Recently, the number of child abuse has been increasing from 11 631 cases in 1999 to 88 931 in 2014 (including 69 death cases). As of April 2017, there are total of 210 child welfare office which are in charge of prevention and response to child abuse, and 136 child protection center where suspected abused children can stay away from their parents. In 2007, each municipal government was required to set up a regional council of countermeasures for children requiring aid consisting of relevant organizations, in order to early detect and respond potential child abuse cases. Although several countermeasures have been initiated by the MHLW, the number of child abuse case has still been increasing and further efforts are needed including capacity building for child welfare officer.

5.2 Patient pathways

In contrast to other OECD member countries such as the UK, the Japanese medical care system does not maintain a gate-keeping or waiting-list system through general practitioners. Instead, patients can choose either a clinic or a hospital as their first point of contact. Most hospitals have outpatient departments where patients regularly consult their physicians.

5.2.1 Example of a patient pathway in Japan

A patient with diabetes mellitus might be diagnosed through any of the following mechanisms:

- Being asymptomatic, the patient is diagnosed either through a general health check-up or a specific health check-up.
- The patient is identified as being diabetic while being treated for another condition in a hospital or a clinic.
- Owing to symptoms or a complication, the patient consults a doctor, either by presenting themselves to a private clinic-based physician or visiting a specialist of their choice at a hospital without referral.

When patients are diagnosed with diabetes mellitus, they are referred for management to a specialist. After initial management and stabilization of their condition by the specialist, the patient is referred back to their local clinic for follow-up. Follow-up may continue in the tertiary hospital specialist clinic, as the tertiary care hospital often functions as the first contact health-care provider for its area; patient may also be kept at tertiary care facilities if he/she has complications that require specialist care. The patient can also be referred back to the specialist clinic at any point by their local clinic if a complication develops or the patient requires a specialist's opinion.

Clinic-based physicians prescribe all the necessary medications and order any necessary tests that are covered by universal health insurance. If the diabetes worsens, the patient develops an acute complication such as ketoacidosis, or the patient is in need of inpatient care, the patient is admitted to any preferred hospital or is transferred after stabilization to a tertiary care hospital from a smaller hospital.

5.3 Primary/ambulatory care

5.3.1 Primary care

The Japanese health-care system does not necessarily distinguish between primary and secondary care and there is no gate-keeper system in Japan. Historically, Japan did not have general practitioner system, and most physicians have chosen a specialty without any national accreditation (i.e., physicians could freely profess their specialty such as internal medicine, surgery, paediatrics, ophthalmology, otolaryngology and gynaecology). Patients often go to secondary health-care facilities even with mild symptoms, and secondary health-care services are accessed directly at an affordable cost (set as the same regardless of specialty, location, public/private under the fee schedule) without the need for referral from primary health-care facilities. These secondary services can be provided locally at small clinics or treatment centres, or at outpatient departments of larger hospitals that would be considered tertiary care centres in a gate-keeping system.

Although hospital outpatient services are available without a referral, the government has attempted to introduce a referral system for the use of hospital services through clinic services. Patients without referral letters from primary care clinics are now required to pay at least \$50 at the reception of larger-size hospitals. By introducing this new system, the use of outpatient departments of larger hospitals due to free access has declined, and health service utilization has shifted to smaller community-based clinics. However, the differences between primary and secondary health-care facilities remain vague, and these community-based clinics often have access to advanced equipment such as MRI machines, enabling the provision of hospital-level services at local clinics.

5.3.2 Health-care utilization for children in Japan

In a previous study in 2011 using a nationally representative panel of households (Ishida Y et al., 2011), among 1000 children per month, 872 had at least one symptom, 335 visited a physician's office, 82 a hospital-based outpatient clinic, and 21 a hospital emergency department in the last month. Two were hospitalized, and four received professional health care in their home. Compared with data from the United States of America, children in Japan more frequently visit both community physicians and hospital-based outpatient clinics. Paediatric health-care utilization is influenced significantly by age and location of residence in Japan. Although the out-of-pocket (OOP) rate is set as 20% of total

health expenditures by the MHLW, most municipalities subsidize for OOP payments such that children can have access to health care almost free of charge (but still subsidy rate varies among prefectures). Japanese parents restrict use of over-the-counter medications for younger children, especially those younger than 2 years of age. Notably, living with grandparents was associated with significantly reduced over-the-counter medicine use (Ishida Y et al., 2011).

5.4 Inpatient care

5.4.1 Survey of Medical Institutions

In 2016, there were 8442 hospitals and 101 529 clinics in total. Approximately 80% of Japan's hospitals are provided by the private sector (medical corporations and individuals) (Ministry of Health, Labour and Welfare, 2017r). Hospitals owned by medical corporations and individuals are independent of direct government management and subject to only limited investment regulation; however, payment for medical services is strictly controlled by the government.

5.4.2 Diagnosis-procedure combination (DPC)

Japan utilizes a case-mix system called the diagnosis-procedure combination (DPC) for inpatient care to pay health-care providers. Diagnosis-related groups (DRG) are calculated based on disease category, while DPC is calculated based on per hospital admission. DPC was introduced in 2002 by the MHLW, and linked with a lump-sum payment system starting in 2003. In total, 1667 facilities with 495 227 beds participated in this system in 2016, which included 81 university hospitals that were obliged to adopt the DPC system (Ministry of Health, Labour and Welfare, 2016i). Approximately 55% of all acute care inpatient admissions in Japan were covered by this system.

DPC databases contain not only administrative data, but also detailed patient demographic, diagnostic and procedure-related data that are collected for all inpatient discharges. Japan uses disease codes defined in the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10), whereas procedures are coded with the original Japanese codes in their records. Hospital staff record the dates of all procedures, examinations and drug or device utilizations. Submission of accurate data from this system is a condition for reimbursement of payment.

5.4.3 Cost containment

The Japanese health-care system has retained a universal health insurance system since 1961. This insurance system covers almost all inhabitants and health-care services, and patients are free to choose any hospital with little payment depending on their socioeconomic circumstances (Ikegami N et al., 2011). However, the Japanese health care system also harbours features that increase health care expenditure: most health care facilities are privately owned (70% of hospitals and 94% of clinics), fee-for-service basis payment for out-patient with macro cap, free access to physicians/health care facilities (no gate-keeping system and waiting lists), and no limitation on the purchasing of expensive equipment (i.e., high density of health care equipment as described in Chapter 4).

In order to preserve this universal coverage and free access while containing costs, Japan employs a uniform fee schedule, which determines both prices and conditions for payment. It has been partially successful in containing national health-care expenditure (see more details in Chapter 3). Indeed, until 2010, Japan's public health-care spending as a share of the GDP was maintained below the OECD average primarily because of the fee schedules set by the MHLW (OECD, 2009). However, because of ageing and the rapidly increasing prices of new technologies in recent years, the total health expenditure as a percent of GDP has been increasing and is now the third highest among OECD countries.

5.4.4 Regulation of the number of beds and nurses

Under the Medical Care Plan, the Japanese government has implemented the concept of "healthcare service areas;" these are geographical units that provide and manage most health-care services. As of 2013, primary health-care service areas consisted of approximately 1700 districts (including cities, towns and villages), secondary health-care service areas consisted of 344 jurisdictions, and tertiary health-care service areas consisted of 46 prefectures and 6 areas in Hokkaido (52 areas in total). In order to balance health-care provision among prefectures, the number of beds has been regulated for different secondary health-care service areas under the Medical Service Law and related legislation (Government of Japan, 1948b). More than 200 secondary health-care service areas had more hospital beds than the objectively assessed number of necessary

beds and so were subject to restrictions on new construction that would increase bed numbers.

The number of nurses at each secondary health-care service area is also limited under the Medical Care Act of 1948. The cap is based on the types of hospital bed: 3:1 (nurse:patient) for general-use beds, 4:1 for long-term care beds, and 3:1 for psychiatric beds.

5.5 Emergency care

The Ministry of Internal Affairs and Communications (MIC) is in charge of pre-hospital care, while the MHLW is in charge of providing emergency care at health care facilities. The major challenges facing emergency care in Japan are as follows: the increasing demand for emergency care because of ageing and overutilization of ambulance services, the quality of pre-hospital emergency care and the still-low survival rate of out-of-hospital cardiac arrests, as described below.

5.5.1 Organization and provision of emergency care

Pre-hospital emergency medical service

In 2016, there were a total of 123 554 out-of-hospital cardiac arrests (OHCA) in Japan. The survival rate after one month was only 16.4% among OHCA who were attended to by bystanders, and 11.7% could go back to their daily life (Fire and Disaster Management Agency, Ministry of Internal Affairs and Communications, 2017). These rates increased by 53.3% and 45.4%, respectively, if bystanders used automated external defibrillator (AED). This number is slightly higher than that of the USA (survival rate was 12% in 2016) (The American Heart Association, 2016). There has been continuous effort to improve the quality of pre-hospital emergency care, and the MIC has provided a series of countermeasures focusing on the utilization of both emergency life-saving technicians and physicians.

1. Dispatch system

In Japan, the fire prevention headquarters of local governments – which comprised 752 fire stations with dispatch centres as of 2014 – provide standardized pre-hospital EMS (Yasunaga H et al., 2010; Yasunaga H et al., 2011). Under the MIC, the Fire and Disaster Management Agency of Japan (FDMA) supervises the EMS system throughout the nation. The designated universal emergency call number is 119. This number is directly connected to a neighbouring dispatch centre with

a computerized dispatch system. On receipt of an emergency call, the nearest available ambulance is sent to the incident location. All expenses for EMS are covered by taxes, and patients are not charged. The number of emergency dispatches increased from 5.46 million in 2010 to 6.05 million in 2015. In particular, the number of patients with mild disease had increased, which accounted for about half of all patients transported by EMS. They were able to return home without requiring hospital admission, and some of their emergency requests were non-essential. This causes a lack of ambulances and delayed transportation for other patients. The average time required to arrive at a patient's location increased from 6.2 min in 2001 to 8.6 minutes in 2014, while the total time required from the emergency call until hospitalization also increased, from 28.5 min in 2001 to 39.4 minutes in 2014 (Fire and Disaster Management Agency, Ministry of Internal Affairs and Communications, 2015a).

Fire preventive headquarters in some prefectures have started to introduce ICT into their dispatch system. Equipped with a mobile tablet with ambulance car, emergency life-saving technicians and other staff can find the nearest available emergency health care facilities without making phone calls to those facilities, all while sharing information including vital signs, severity and images of the patient prior to their arrival to the emergency care facility.

2. Emergency life-saving technician

Generally, an ambulance crew is organized with three EMS staff members in a local centre, including at least one emergency life-saving technician (ELST) who has undergone extensive training in providing pre-hospital EMS (Tanigawa K et al., 2006). As of 2014, there were a total 31 012 EMS staff who had an ELST license (Fire and Disaster Management Agency, Ministry of Internal Affairs and Communications, 2014b). ELSTs perform CPR according to the Japanese CPR guidelines, which are based on the guidelines of the American Heart Association and the International Liaison Committee on Resuscitation (ECC Committee Subcommittees and Task Forces of the American Heart Association, 2005).

ELSTs can provide only limited pre-hospital EMS procedures, such as semi-automated external defibrillation, insertion of an adjunct airway (oesophageal obturator airway or laryngeal mask airway), cannulation of a peripheral intravenous line, and infusion of Ringer lactate solution and epinephrine. Only specially trained ELSTs are permitted to insert tracheal

tubes. Because of the increasing demand for enhancing pre-hospital care, the extent of medical services which ELSTs can perform has been expanding year by year, and there is new concern on how to secure the quality of care provided by ELSTs.

In 2001, the Medical Control System for paramedics was established to ensure the quality of EMS providers' medical procedures during the transportation of patients from the emergency site to the medical facility via a physician's instruction and monitoring.

3. Pre-hospital care by physicians

In parallel with emergency care provided by ELSTs, physicians are also required to participate in prehospital care more than before. There are mainly two types of prehospital care provided by physicians: "doctor car" and "doctor helicopter." Doctor car refers to physician-operated ambulances that enable physicians to go directly to the patient and carry out any emergency treatment according to their diagnoses and judgement. They can select from many treatment options, including the use of a semi-automated external defibrillator, tracheal tube insertion, central venous catheterization, and infusion of catecholamines, lidocaine, atropine, anaesthetic drugs and thrombolytic agents. The total number of dispatched doctor cars was estimated to be 22 793 cases in 2012 (Tatsuno H et al., 2013). With regard to doctor helicopter, as of 2015, 46 helicopters were introduced in 38 prefectures and were dispatched 22 643 times in 2014.

Emergency medical care at health care facilities

System for provision of emergency care: from primary to tertiary

For primary emergency care, as of 2012, weekend and night-time emergency rooms were available for patients with non-severe illnesses in 630 districts; patients can visit the emergency rooms on foot. There were 556 holiday on-duty doctor systems in place. There were 6.2 million users of these systems in 2012. Secondary and tertiary emergency care are provided in line with each prefecture's Medical Care Plan. The number of emergency care units is determined based on the population of each secondary health-care service area. As of 2012, there were 3259 secondary emergency medical centres, which have a role in performing first aid for emergency patients and, if needed, inpatient care.

With regard to tertiary emergency care, tertiary emergency medical centres and advanced critical care and emergency centres play a central

role. As of 2012, there were a total of 258 tertiary emergency medical centres located in the 47 prefectures, and the number is increasing year by year. The increase can be attributed to the fact that each prefecture was encouraged to establish a tertiary emergency medical centre for every 1 000 000 persons under the Medical Care Plan; there are also strong incentives under the fee schedule. However, there were large differences between centres, for example, the number of full-time doctors employed or the number of seriously ill patients accepted. Some facilities do not have the capability to accept all seriously ill patients 24 hours per day. The number of patients with severe trauma has declined, while the number of tertiary emergency medical centres is increasing, resulting in a decline in the number of patients per hospital (Fire and Disaster Management Agency, Ministry of Internal Affairs and Communications, 2015b). Therefore, centralization may be necessary to maintain a high quality of trauma care.

Advanced critical care and emergency centres have a specific role to play in treating patients with several illnesses requiring special care, such as severe burns, drug poisoning and traumatic digital amputation. In addition, they play the same role as tertiary emergency medical centres. As of 2012, there were 28 advanced critical care and emergency centres across Japan.

Table 5.6 Category and number of emergency care facilities in 2012

Category	Number	Feature
Tertiary emergency care		
Tertiary emergency medical centres	258	Accept any type of patient in 24 hours
Advanced critical care and emergency centres	28	
Secondary emergency care (patient needs to be hospitalized)		
Emergency medical centre	3259	Rotation basis among the secondary health-care service areas
Collaborative emergency centre	10	Designated hospital with assistance from neighbourhood clinics
Primary emergency care		
Weekend and night-time emergency	630	Managed by the Japan Medical Association
Holiday on-duty doctor system	556	Managed by the local government

Source: Ministry of Health, Labour and Welfare, 2012c

Emergency care for children

As a pre-hospital care service, a public paediatric emergency telephone consultation service called “child emergency phone services #8000” was established in 2010. Services are provided on holidays or at night to help parents judge the severity of a child’s acute illness/injury and decide whether or not they should go to an emergency health care facility. The number of telephone consultations is increasing yearly; in 2011, it reached about 53 million consultations, of which one quarter was deemed to require emergency room visits (Ministry of Health, Labour and Welfare, 2018a).

An advanced perinatal centre is defined as a centre with six or more beds in the Maternal– Fetal Intensive Care Unit (MFICU) and nine or more beds in the Neonatal Intensive Care Unit (NICU). The MHLW requires all prefectures to have at least one advanced perinatal centre in each tertiary health-care services areas. Under the advanced perinatal centre, each prefecture has also set up regional perinatal centres and has encouraged strong collaboration between the advanced perinatal centre and regional perinatal centres. As of 2014, there were 100 advanced perinatal centres and 292 regional perinatal centres. The MHLW reported in 2011 that approximately half of the cardiac arrest cases in pregnant mothers were caused by non-obstetric diseases, including stroke and cardiovascular diseases. In some cases, first aid for such cases was delayed due to lack of cooperation between perinatal centres and tertiary emergency care centres.

Example of patient pathway for emergency care in Japan

A 55-year-old male taxi driver, residing in Tokyo, felt a sudden severe headache when he got up early in the morning on 30 December 2017. He told his wife that his headache was a “thunderclap headache,” which was his “worst headache ever.” Several symptoms appeared immediately after the headache, including nausea, vomiting, confusion and irritability. His wife called 119, and an ambulance car arrived at his home 7 minutes after the call. He was transported by the ambulance car to the nearest secondary-care hospital located 10 km away from his home. On arrival at the hospital, he showed decreased consciousness and alertness. The first-aid physician quickly did physical examinations, and he found a stiff neck and focal neurological deficit. The doctor strongly suspected a subarachnoid haemorrhage and made a prompt decision to transfer the patient to a tertiary-care hospital with a Stroke Care Unit.

The patient was then transferred by the same ambulance car to the tertiary-care hospital located 20 km away from the secondary-care hospital. Soon after he arrived at the hospital, a head CT scan followed by cerebral angiography was performed, which showed a ruptured intracranial aneurysm. Open craniotomy and clipping of the aneurysm were performed by a neurosurgical specialist on the day of admission. Postoperative intensive care included medication for controlling the blood pressure, calcium-channel blockers to prevent arterial spasms and phenytoin to prevent seizures. After two weeks of intensive care, his condition became stable and he was moved from the Stroke Care Unit to a general ward. He continued rehabilitation for his postoperative mild neurological deficits, and was discharged to home on 10 March 2015. The fees for surgery and hospitalization were mostly paid from the universal health insurance fund with cap payment for high medical expenditure, except for his OOP payment amount of approximately US\$ 1400. Now he is happy to receive a rehabilitation programme from long-term health insurance (described later in this chapter), and wishes to go back to work in the near future.

5.6 Pharmaceutical care

5.6.1 *Pharmaceutical sector's production capabilities*

Pharmaceutical markets in Japan

The global pharmaceutical trade accounts for US\$ 1072 billion in 2015, and Japan contributes approximately 7.6% of this figure (Japan Pharmaceutical Manufacturers Association, 2017a). Japanese pharmaceutical companies sold US\$ 109.1 billion worth of pharmaceuticals annually, including US\$ 100 billion for prescribed medicines and US\$ 6.4 billion for over-the-counter (OTC) drugs in 2014 (Ministry of Health, Labour and Welfare, 2013f). Imported and exported medicines in 2015 accounted for US\$ 25.6 billion and US\$ 4.1 billion, respectively (Japan Pharmaceutical Manufacturers Association, 2013). The export value of medicines had been stable at around US\$ 3.2–3.3 billion between 2001 and 2014 and jumped to US\$ 4.1 in 2015, while total imports have dramatically increased from US\$ 8.1 billion in 2005 to US\$ 25.5 billion in 2015 (Japan Pharmaceutical Manufacturers Association, 2013).

Pharmaceutical companies

In 2015, the market share of USA companies was 42.6%, followed by Japan (7.6%), Germany (4.0%), France (4.0%), the UK (2.6%) and Italy

(2.5%) (Japan Pharmaceutical Manufacturers Association, 2017a). The number of Japanese pharmaceutical companies decreased from 1123 in 2000 to 310 in 2014, due to mergers and acquisitions. Sales of the five leading companies in Japan accounted for 37.1% of all prescribed medicines in 2014 (Japan Pharmaceutical Manufacturers Association, 2017b). Most pharmaceutical companies just sell generics: generally small and medium-sized companies that do not have adequate R&D capacity to develop new medicines. Among the top 25 pharmaceutical companies globally in terms of total sales of medicines, there are five Japanese pharmaceutical companies; the biggest is *Takeda*, which ranked 16th in the world in terms of total sales in 2015.

The proportion of research costs in total sales was 11.7% in 2013. The cumulative success rate of developing new drugs was 1:29 140 between 2009 and 2013.

The pharmaceutical industry employed 167 514 workers in 2012. There are approximately 73 817 (44.1% of total employed) medical representatives in Japan. They visit physicians to provide information on drug efficacy and safety and collect information on adverse effects.

Wholesalers

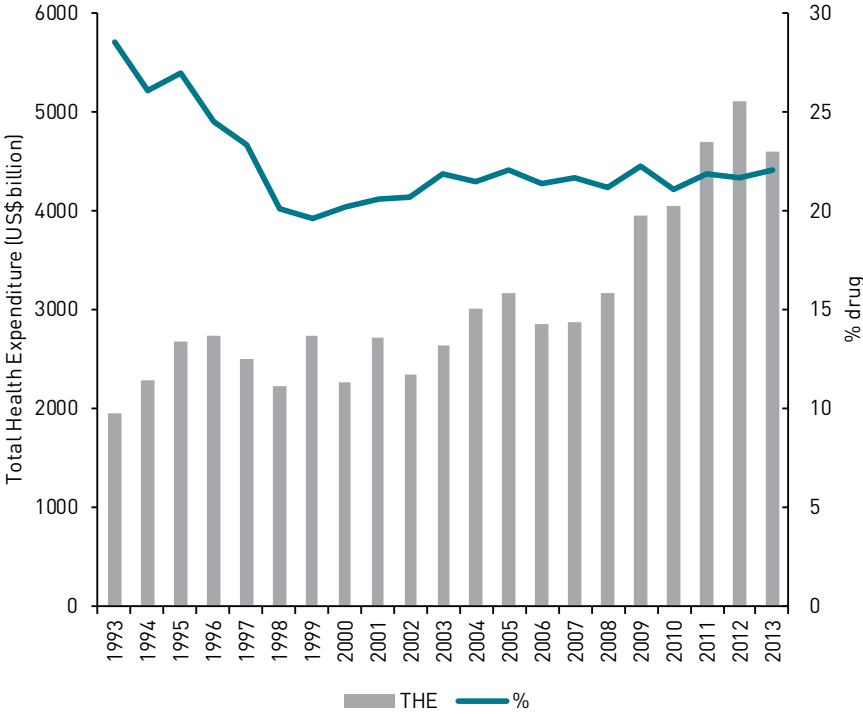
As of 2016, 79 wholesale companies were affiliated with the Japan Pharmaceutical Wholesalers Association, and there were 53 875 people working in the wholesale industry (The Federation of Japan Pharmaceutical Wholesalers Association, 2017).

In 2015, 21.4% of wholesales drugs were sold at large-sized hospitals, 6.0% at small- and medium-sized hospitals, 16.9% at clinics and 55.2% at pharmacies and drug stores (The Federation of Japan Pharmaceutical Wholesalers Association, 2017).

Health-care expenditure on medicines

Drug costs accounted for 22.1% of all health expenditure in 2013. Although the total drug expenditure has been increasing yearly, its rate of increase is almost the same as the rate of increase in health expenditure (Fig. 5.2). About 800 million prescriptions were written, and about US\$ 64.2 billion was disbursed by public health insurance for prescribed medicines (Ministry of Health, Labour and Welfare, 2016a).

Fig. 5.2 Trend in total health expenditures and proportion of drug expenditures (%)



Note: total health expenditure is converted (from ¥ to US\$) based on the currency rate as of 1st January in each year
Source: Ministry of Health, Labour and Welfare, 2016c

Generic drugs

The percentage of generic drugs among all pharmaceuticals purchased was 33.5% by volume and 12.4% by sales in 2015, which is substantially lower than in other developed countries, including the USA, the UK, and Germany at 91.9%, 75.0% and 84.8% by volume, respectively (Ministry of Health, Labour and Welfare, 2016h, 2017c).

Brand-name pharmaceuticals receive market protection for a long time in Japan, and generics are not widely used after patent expiration. Recent government policies have been developed to improve the rates of generic substitution, and promotion of generic drugs has formed one of the centrepiece in the effort to reduce medical expenditure (Iizuka T et al., 2011).

In 2007, the Cabinet Office's Council on Economic and Fiscal Policy created an "Action programme on promoting the safe use of generics" and set a target to increase the quantity-based share of generic pharmaceuticals to 30% by FY 2012. However, the actual share of generics had till then not kept pace with high expectations and, in 2013, the MHLW introduced the "Roadmap for further promotion of generics" with a target to increase the share of generic pharmaceuticals to 70% by volume by FY 2017, and to further reach 80% by FY 2020 (56.2% as of September 2015). This new roadmap consists of six pillars of action: (1) stable supply of generics; (2) secure quality of generics; (3) sharing information and communication; (4) create environment for further use of generics; (5) modification of universal health insurance; and (6) monitoring and evaluating the roadmap.

5.6.2 Price-setting for pharmaceutical reimbursement

The government sets the prices of all drugs reimbursed by the universal health insurance system with the "fee schedule." The list of reimbursable drugs includes nearly 16 000 items for oral, parenteral and topical administration.

For new drugs, reimbursement prices are determined with reference to the prices of similar drugs that have already been approved. If there is no similar drug, the prices are determined based on accounting for material and other costs.

The reimbursement price used to be revised every two years. The revised price is determined according to market prices during the past two years. To calculate the price, the government is authorized by the *Health Insurance Act* to conduct a market drug price survey before the revision. This survey is conducted in close cooperation with wholesalers, who submit their transaction records with health care providers. The official reimbursement price is set at the weighted average of the transaction price with an adjustment, which is usually set at 2%. This system reduces the reimbursement prices of all the drugs, and approximately US\$ 4.5 billion of pharmaceutical costs are cut at every revision.

However, in 2017, a new chemotherapy called Nivolumab was released for sale originally for malignant melanoma, costing approximately US\$ 336 110/year/person. Its use was then expanded to some types of lung cancer and renal cell carcinoma, and it has started to put severe financial burden on the universal health insurance system. The MHLW

urgently revised the reimbursement rate down to 50%. Since then, the MHLW decided to change the revision schedule from every two years to every year so as to better reflect the market trend and to contain rapid increases in pharmaceutical expenditure. Debate questioning how to balance cost-containment for new medicines while also promoting R&D (i.e., incentives for pharmaceutical companies) has been ongoing.

5.6.3 Antimicrobial resistance

In general, the total amount of antibiotics used is at the same level as in other countries, while the use of Cephalosporin, Quinolone and Macrolide are higher in Japan than in other countries. Additionally, the prevalence of antimicrobial resistances is higher in Japan than in other countries. In 2014, the rate of penicillin-resistant *Streptococcus pneumoniae* (PRSP) was 48%, and the rate of Methicillin-resistant *Staphylococcus aureus* (MRSA) was 51%, which were higher than the rates found in other OECD countries (Ministry of Health, Labour and Welfare, 2016e).

At the Sixty-ninth World Health Assembly in 2015, Member States unanimously adopted the Global Action Plan on Antimicrobial Resistance (AMR) as well as the resolution, which urged all Member States to create their own national action plan on AMR. Responding to this resolution, Japan launched the National Action Plan on AMR in April 2016. In the Action Plan, Japan decided on six important areas of focus: (1) public awareness and education; (2) surveillance and monitoring; (3) infection prevention and control; (4) appropriate use of antibiotics; (5) research and development; and (6) international cooperation (Ministry of Health, Labour and Welfare, 2016f).

5.6.4 Pharmaceutical monitoring and surveillance

The sorivudine tragedy of 1993, in which 16 patients died within a month of a new drug being put on the market, led to the enhancement of safety measures, such as the introduction of a new standard of post-marketing surveillance for pharmaceutical companies. In July 2003, adverse drug reaction reporting became mandatory for all physicians and pharmacists. Reported cases are analysed and investigated by the Pharmaceuticals and Medical Devices Agency (PMDA), established in 2004. The MHLW publishes Pharmaceuticals and Medical Devices Safety Information 10 times per year and issues Emergency Safety Information in an ad hoc manner.

Blood products

Consumption of blood products per capita in Japan is almost at the same level as or even lower than of most industrialized countries. In 2008, there were total 23.6 unit/1000 for red cell concentrate (RCC), 7.8 unit/1000 for fresh frozen plasma (FFP) and 6.3 unit/1000 for platelet concentrate in Japan, compared to 46.1 unit/1000, 14.4 unit/1000 and 6.5 unit/1000, respectively, in the USA (Ministry of Health, Labour and Welfare, 2012b). All blood products consumed domestically should be in principle supplied by donated blood. However, donated blood alone is not sufficient to fulfil the domestic demand, so much of the blood necessary for production of fractionated plasma products is imported. As of 2012, 95.7% of globulin was supplied by domestic blood donation; however, only 59.6% of albumin and 16.7% of factor VIII were supplied by domestic blood donation.

In May 2015, one of the biggest blood product companies in Japan, *Kaketsuken* was accused of illegal blood product generation and processing by the MHLW, which revealed several challenges related to blood products: there is no clear vision or national strategy on blood products, the supply system is weak due to poor governance of production companies and over-dependence on a select few companies, and Japanese blood products companies are left out of the global market. Responding to these challenges, a task force consisting of several experts made recommendations to the MHLW in 2016, which include the promotion of evidence-based blood production policy, reforms of the blood production market by increasing effectiveness and transparency, reforms of blood production companies so as to strengthen their capacity to sell products overseas, and strengthening the supply system (Ministry of Health, Labour and Welfare, 2016k).

5.7 Rehabilitation/intermediate care

In Japan, with an aim to provide seamless rehabilitation services, the government provides rehabilitation care for inpatient, out-patient and in-home settings.

Acute phase and restorative rehabilitations are covered by universal health insurance, while chronic phase rehabilitation is covered by both universal health insurance and long-term care insurance (LTCI) (health-care insurance started to cover restorative rehabilitation facilities in 2000). Services covered and the duration of coverage are decided by the government. The government sets different levels of expenses to be reimbursed based on the disease –cardiovascular disease,

cerebrovascular disease, disuse atrophy, musculoskeletal malfunction and respiratory diseases.

5.7.1 Rehabilitation under health-care insurance

National health-care insurance covers inpatient rehabilitation at acute care and restorative facilities. In acute care hospitals, a medical rehabilitation team, which includes rehabilitation specialists, physical therapists, and occupational and speech therapists, is used to deliver rehabilitation services. Some patients who need long-term intensive care after severe traumatic injuries receive long-term rehabilitation in acute care hospitals, but where possible, rehabilitation is better provided in other settings, especially rehabilitation care or chronic care hospitals (Mizuochi K, 2012).

5.8 Long-term care

5.8.1 Population ageing

As Japan's total population began to decline while the older population continued increasing, the proportion of older people in the population (aged 65 years or older) rose from 17.4% in 2000 to 26.7% in 2015. It is expected that the proportion of older people will reach 39.4% in 2055 (Cabinet Office, Government of Japan, 2016). As a result of the two baby booms (1947–1949 and 1971–1974), the population of older people above 75 years of age will reach its peak in 2025.

In every country, population ageing implies drastic transformations at the societal, economic and political levels. The ageing of the population and the decline in birth rates have been particularly significant in Japan, becoming a major obstacle to the establishment of a sustainable social security system. Health expenditure for those aged 65 years and above is 4.3 times higher than for other age groups, and the majority of costs are covered by the working class population through the payment of taxes and medical insurance premiums.

5.8.2 Long-term care insurance

The traditional family system in Japan placed primary responsibility for support of older people on families, and nearly 55% of people aged 65 years and above lived with their children in 1995. However, the proportion of one-person households among this older population more than doubled between 1975 and 1995. With rapid demographic change and

the dissolution of traditional family structures, the government took a number of measures to promote the “socialization of care” for frail older people during the mid-1990s. In response to the expected shift from traditional family care to social care, the Japanese government started the national LTCl system in 2000 to alleviate the burden on family caregivers.

LTCl is based on the Long-Term Care Insurance Act (Ministry of Health, Labour and Welfare, 2016b). This system aims to certify the care-level needs of the elderly and to provide care services suited to this level. There are seven care levels, including two requiring support (levels 1 and 2) and five requiring long-term care (levels 3–5). Although the original purpose of LTCl was to support the elderly with physical and/or cognitive malfunction due to ageing, its focus has been shifting from supporting disabilities to promoting self-independence. The total number of the elderly certified as requiring one of these care levels was reported to be 5.69 million in 2013 (Ministry of Health, Labour and Welfare, 2016b), which is twice the number it was at the time the system was implemented in 2000 (2 180 000 beneficiaries) (Olivares-Tirado P et al., 2011). Because of this, the sustainability of the system has been a major issue.

5.8.3 Beneficiaries

Municipalities act as insurers for the LTCl scheme, as they are responsible for implementing the Long-Term Care Plan and for determining insurance premiums by looking at the balance between the needs of the population and the quantity of services provided in the area. In the LTCl system, prefectures support the municipalities, while the national government decides the overall direction of the system.

Municipal governments start to collect insurance premiums at the age of 40 years. Half of the finance comes from taxes (25% from the Central Government, 12.5% from the prefectures and 12.5% from the municipalities) and half comes from premium contributions. The beneficiaries are divided into two categories: category I beneficiaries are the elderly aged 65 years and above, and category II beneficiaries are people aged 40–64 years with disabilities. For category I beneficiaries, most of whom are pensioners, the premium is withheld from their pension payment. For category II beneficiaries (aged 40–64 years), most of whom are employed, health insurers levy the premium by adding it to the health insurance premium. Beneficiaries can use LTCl services by paying 10% of the costs.

5.8.4 Needs assessment

When people wish to receive LTCI, they must apply to the municipal government for a needs assessment. The purpose of this assessment is to analyze physical and cognitive functions so as to decide which category the person belongs to (two levels requiring support (levels 1 and 2) and five levels requiring long-term care). The municipal government dispatches a surveyor, who must be a qualified care manager, to the applicant. An on-site survey is conducted using a uniform assessment tool, which consists of 73 survey items to measure activities of daily living and behaviours. Depending on the surveyor's findings, a computer-assisted evaluation is conducted for preliminary assessment of care levels. Municipal governments also seek a medical opinion from attending doctors. The Needs Assessment Review Committee, consisting of around five health and welfare professionals, reviews the surveyor's findings and the doctor's opinion to decide whether the preliminary assessment should be altered. There is a significant difference in certification rates (the number of individuals who are certified either as requiring support or requiring long-term care) among prefectures, and transparency and comparability of the certification process is now of great concern.

5.8.5 Benefits

The benefits provided by the system include both institutional and domiciliary services. Domiciliary services include health care such as nursing visits, rehabilitation visits, and ambulatory rehabilitation and welfare services such as home help services, cooking, bathing and day services. Although for-profit corporations are not allowed to participate in health-care services, they are permitted to provide welfare services. The proportion of for-profit corporations has been increasing and reached 47.2% for nursing visits and 65.5% for welfare services in 2016.

5.8.6 Care management

Under LTCI, licensed care managers coordinate different services provided by different providers to accommodate geographically dispersed home settings within the limits of an allocated budget. Those who would like to be licensed care managers are required to pass an examination for long-term care support. This exam does not confer a national license; it is managed at the prefectural level. There was a total of 131 560 applicants in 2017, but only 28 233 passed the exam. These managers are expected to serve as neutral agents representing clients' interests rather than acting as sales agents for providers.

5.8.7 Care market

One of the most radical changes that followed the launch of the LTCI has been the creation of the care market. In the conventional system, the local government decided who needed care services and who was admitted to nursing homes, and service users had no right to choose the type or provider of services. Under the LTCI, service users can contract any long-term care provider and choose the type and frequency of services, within benefit limits that vary by individual eligibility status and are determined by a nationally standardized needs certification system.

A central purpose of the reform was to encourage new providers to operate in aged care services so as to increase the volume of services, and to attain efficient and quality care services via user choice. A wide range of providers, including for-profit providers, were allowed to enter the market in community-based care, and compete with traditional public and quasi-public social welfare providers. These non-governmental, non-profit organizations provide public services for children, people with disabilities and the older people under governmental contracts.

The care market created by the LTCI has been well accepted in Japan, and usage of LTCI services has increased, especially in home-based care: the number of home-care visits increased from 1 240 000 in 2000 to 3 890 000 in 2015 (Ministry of Health, Labour and Welfare, 2015c). However, the overall cost of the LTCI system also increased by 321%, from about US\$ 31.6 billion in 2000 to about US\$ 101.3 billion by 2016. The market created by LTCI is not a pure market and is perhaps better understood as a “quasi-market” in which some factors are controlled by the government and 90% of care service purchasing is covered by premium revenue and taxes. Unlike the quasi-market system introduced in the UK, there is no predetermined level of supply, and there is free entry and exit of providers. There is strong competition between providers for clients, so the more the market expands, the more public expenditure increases, and the government is faced with the need to control costs to sustain the system.

Care providers seek to cut labour costs under market competition, but under poor working conditions, the turnover rate of care workers is high, with potentially negative effects on quality of care. The market under LTCI was successful in terms of the volume of services, but most providers were skeptical as to whether competition in the market could facilitate quality care services (Kubo M, 2014).

According to the MHLW, care workers who are about 40 years old and working under open-ended contracts receive US\$ 1750 a month, while the average salary for similar workers across all occupations is US\$ 2926 (Ministry of Health, Labour and Welfare, 2008b). Wages were set too low, even though the demand for care workers was very high. Evidence that workers were discouraged from choosing a career in aged care is seen in reports, which showed that, in late 2012, only about 58.4% of the total of about 1 085 994 certified care workers (*Kaigo fukushishi*) specified by the Social Welfare Worker and Certified Care Worker Act in Japan were working in care services (Kubo M, 2014). Turnover among home-based care workers is approximately 15% per annum, and as many as 40% of those who leave do so after less than a year in the job. As a result, a large number of care workers tend to have low skills (Hotta S, 2007).

Shortages of care workers were more pronounced in Tokyo than in other areas because there is also a high demand in other service industries, and providers have to compete with those industries as well as with other providers. Additionally, wage differences between care workers and other occupations were more marked in Tokyo because the premium added to the stable base benefit for care services was not enough to cover the difference in wages in other service industries (Yamada A et al., 2009). This shortfall is the main cause of the more serious shortage of care workers in Tokyo compared to elsewhere.

Efforts to ensure a supply of trained workers appear to be failing. Training institutes for certified care workers have not met their student quotas because of a shortage of applicants for several years. In April 2007, there were 16 696 applicants for 26 095 places available in 419 training institutes, only 64% of the quota, and a growing number of institutes began to close (Kubo M, 2014). Potential workers have clearly started to give up on care services as a career due to the poor working conditions.

Failures in schemes for qualification and career programmes are related to fixed-term contracts and low wages. Although 80% of care workers were employed under fixed-term contracts on low wages, they are required to undertake extensive pre-employment training, at their own expense.

Providers are also required to encourage employees to undertake further training. While setting higher training requirements to become care workers could be expected to enhance the status of care work, such requirements have not been linked to good working conditions.

Under these circumstances, professionalization through enriched training and higher qualifications has not improved the supply of care workers, and may have made shortages worse. Providers have faced the difficulty of pursuing the almost contradictory goals of attempting to expand the workforce while keeping wages low and certification requirements high.

The challenge that must be tackled in the near future is how to design a market for aged care, including how to finance it, enhance efficiency and incentivize the provision of quality services, so that the LTCI system can ensure both the quantity and quality of services (Kubo M, 2014).

5.8.8 Where people die

Most Japanese currently die in hospitals. Historically, people died in their homes and very few died at health-care facilities: 82.5% at home and 9.1% at healthcare facilities in 1951 (Ministry of Health, Labour and Welfare, 2011b). However, in 2009, 78.4% died in hospitals, while only 14.2% died at home; the proportion of people dying at home is very small compared to other countries. Under Integrated Community-Care System (ICCS), the government is currently attempting to promote an environment in which people can live to the very end of their life stage and die in their home, including nursing homes and long-term care facilities; this vision aligns with the wishes of the majority of the elderly. However, the number of people who die at nursing homes and long-term care facilities for the elderly has been increasing, though the proportions are still low at 1.5% and 1.1%, respectively, in 2009 (Ministry of Health, Labour and Welfare, 2012d).

Integrated Community Care system

Along with societal changes, such as the increase in numbers of unmarried people, urbanization and the growth of single-person households or parent-child separated households, the number of elderly persons living alone has increased (Ministry of Health, Labour and Welfare, 2016d). In response to Japan's rapid ageing, the Japanese government has promoted an ICCS since 2006. This system aims to provide appropriate living arrangements, appropriate social care and daily life support services within the community and integrate prevention, medical services and long-term care by 2025, when the elderly population is expected to peak. This system is managed by municipal governments, using a fund from the LTCI system.

The ideal size of each community is defined by the approximate range of a 30-minute walk, which is consistent with the scale of most Japanese school districts. The National Assembly report on Social Security also confirmed the necessity of building a system to provide social care and lifestyle support services in addition to long-term care and appropriate health care within the community.

From a broader social services perspective, the best method to improve collaboration between social care and health care providers is not well understood. Considering the rapid ageing of the Japanese population, the community-based integrated care system rapidly drew attention, but one of the major obstacles to its implementation was the lack of coordination between various providers and the lack of clarity concerning the assignment of responsibilities. Also, even though health care services play an important role, the LTCL system still relies on the contribution from families (see also in Chapter 6).

5.9 Services for family/informal carers

Although long-term care largely depends on family/informal carers, there is no formal mechanism for supporting families or informal care-givers in Japan. LTCL covers a wide range of services including shopping, cleaning the house and preparing meals, there are still scarce evidence if LTCL can compensate for the work of families.

5.10 Palliative care

Under the Basic Plan to Promote Cancer Control Programs endorsed in 2012, the MHLW set palliative care as one of the important areas in cancer control and formulated a series of policy measures (Ministry of Health, Labour and Welfare, 2010a). The overall goals of the palliative care policy are given below:

1. Every physician involved in cancer treatment has basic knowledge and skills in palliative care.
2. Create an environment where the patient can receive an adequate level of palliative care.
3. Create a supportive environment both in the home and community so that patients and their families can have the option of continuing to receive palliative care in a familiar setting.

The major policy options are as follows.

1. to provide basic training in palliative care for physicians who attend to cancer patients;
2. to create a supportive environment at specialized cancer hospitals, where they are required to have a palliative care centre, palliative care unit and outpatient clinic for palliative care;
3. to develop the capacity of health-care professionals to provide palliative care;
4. to promote in-home palliative care; and
5. to raise awareness of palliative care among the general public, including the patients themselves and health-care professionals.

5.11 Mental health care

The Japanese government approved the mental health policy entitled, “Reform Vision for Mental Health and Welfare” in 2004 (Ministry of Health, Labour and Welfare, 2004). Before that, patients with mental disorders tended to be hospitalized even without any medical problems. This new reform vision promotes shifting patient-care from the hospital to their respective communities by (1) raising awareness about mental disorders among the general public, (2) reforming the mental health-care provision system, and (3) strengthening community support so patients can live in their community.

5.11.1 Patient statistics

The number of patients under treatment for mental disorders was estimated at 3.92 million in 2014, with 0.31 million inpatients and 3.61 million outpatients. Schizophrenia was the most common cause among inpatients with mental disorders; mood disorder, schizophrenia, and neurotic disorders were common among outpatients (Ministry of Health, Labour and Welfare, 2015d).

5.11.2 Mental health care

Mental health care in Japan is characterized by long periods of hospitalization. A large number of hospitals and beds are allocated for mental health, and there is an increasing number of dementia cases due to ageing. In 2014, the average duration of hospitalization was 281 days, which is far higher than that in other OECD countries (Table 5.7). In total, 90% of the psychiatric beds are privately owned, which makes deinstitutionalization more difficult. Following the Japanese Government’s

policy decision to shift mental health services from inpatient care to community care in 2004, the number of beds in psychiatric hospitals started to decline, from 354 000 beds in 2004 to 338 000 beds in 2014, which is still higher than that in other high-income countries. Outpatient and inpatient treatment of any mental disorder is covered by the universal health insurance system.

Table 5.7 Average length of hospital stay (days) for mental and behavioural disorders

	2000	2005	2010	2015
Australia	15.6	14.9	14.6	14.2*
Austria	23.3	18.9	22.0	25.8
Belgium	11.5	11.0	10.3	9.6*
Canada	15.5	15.4	17.3	23.0
Chile	-	34.5	44.1	27.7*
Czech Republic	56.5	55.5	52.7	40.2
Denmark	-	25.7	20.8	17.3
Estonia	20.7	14.6	16.7	16.9
Finland	-	43.5	39.9	29.4
France	6.8	6.5	5.9	5.8
Germany	25.0	24.4	24.2	24.7
Greece	113.0	111.0	80.0	-
Hungary	-	22.6	27.5	31.0
Iceland	16.2	12.8	-	11.8
Ireland	14.4	11.1	11.1	12.3*
Israel	207.3	79.8	53.3	53.3
Italy	-	14.7	14.0	14.1
Japan	377.0	338.0	307.0	274.0
Republic of Korea	-	95.4	111.8	132.5
Latvia	-	-	-	22.9
Luxembourg	13.8	27.9	26.8	26.5
Mexico	46.7	28.2	25.3	27.8
Netherlands	29.4	22.6	19.0	-
New Zealand	64.6	55.5	49.9	36.3*
Norway	4.5	4.1	3.2	19.3*
Poland	-	27.8	36.2	35.4
Portugal	16.5	16.9	16.6	16.9
Slovak Republic	35.1	31.5	28.7	27.4
Slovenia	8.0	40.4	36.7	34.9
Spain	52.9	25.2	26.3	26.3
Sweden	19.5	18.1	15.6	16.1
Switzerland	-	43.4	32.7	28.0
Turkey	-	-	-	20.7
United Kingdom	64.2	58.2	47.9	37.7
United States	7.3	6.9	6.4	-

Note: * Data as of 2014.

Sources: OECD, 2017c, Japan's data; Ministry of Health, Labour and Welfare, 2017r

5.11.3 Special patient care

There are mainly five types of hospitalization: involuntarily hospitalization (without any consent, limited to patients who have a high risk of harming themselves or others), emergency involuntarily hospitalization, involuntarily hospitalization for medical care and protection (which requires consent only from the family), emergency hospitalization (which does not require consent either from the patient or family) and voluntarily hospitalization. In 2012, about 53.9% of inpatients were voluntarily hospitalized, while most of the remaining were involuntary hospitalization for medical care and protection (44.9%); a small proportion (0.6%) were involuntarily/emergency involuntarily hospitalization. Special inpatient care is also provided for people who commit a severe crime due to a state of insanity.

5.11.4 Welfare and rehabilitation services

Welfare services for people with chronic mental illness are provided under the Services and Support for Persons with Disability Act, which includes payment for care, payment for employment support and community life support (Government of Japan, 2005). Medical costs for outpatient care of persons with chronic mental illness are also supported by this welfare system, with about 10% of payments coming from direct patient contributions. Medical institutes also provide several rehabilitation programmes, such as psychiatric day care, night care, day/night care and short care.

5.11.5 Systems for community mental health

The Act on Mental Health and Welfare for the Mentally Disabled provides a basis for community mental health in Japan. Public health centres of prefectures and major cities are the first-line service providers, cities and municipalities provide direct services for persons with chronic mental illness, and prefectural mental health and welfare centres provide technical and advanced support. The prefectural government is responsible for planning mental health services. These services provided by public health centres includes preventive and welfare-services such as rehabilitation, capacity building and employment support, while most medical services (therapeutics) are provided by private clinics and hospitals.

5.11.6 Suicide prevention

The number of suicide cases had increased since around the late 1990s and peaked at 34 427 cases in 2003, after which it began a gradual decline. In 2015, the Cabinet Office reported 24 035 suicides (Ministry of Health, Labour and Welfare, 2016q). Although suicide cases have been decreasing, Japan still has one of the 10 highest suicide rates in the world. The suicide rate among older people is gradually decreasing, while that of the younger population and middle-aged men is increasing, in particular, among those who are unemployed and divorced.

In order to tackle this trend, the government passed the Basic Act for Suicide Prevention in 2006 and formulated the General Principles for Suicide Prevention (GPSP) policy in 2007. In parallel with the GPSP, the government established a special fund programme for local governments to provide a comprehensive and community-based approach. Moreover, the government strengthened interventions in the work environment including prevention and treatment for depression, while strengthening counter measures for alcohol addiction patients who are at a higher risk of suicide. The government also provides training courses for the general public so that people can promptly and effectively react to individuals who are trying to commit suicide. In 2015, Takeshima et al. analysed the overall suicide prevention policy described above in Japan. They concluded that the suicide rate has been steadily decreasing in Japan and that these initiatives have been effective (Takeshima T et al., 2015).

5.12 Dental care

Dental care in Japan dates back to the late 1980s. In 1989, the Ministry of Health and Welfare started to advocate for the “8020” campaign, which attempts to improve dental health among those aged 80 years older by maintaining the presence of at least 20 natural teeth. Because major reasons for the natural loss of teeth are periodontal disease and cavities, attention has been paid to these diseases, including annual check-ups for elementary and junior high school students.

Dental care costs of ¥2678 billion (equivalent to US\$ 23.7 billion) made up 6.9% of the national health expenditure in 2012. There were 103 831 dental hygienists and 34 640 dental technicians who assisted in the practice of 103 972 dentists⁵ in 2016. The MHLW conducts a nationwide

5 The number of dentists is as of December 31 2014.

sampling survey on oral health every five years (it used to be every six years and changed to five years in 2016). The latest findings show that the proportion of the elderly aged 80 years and above who have at least 20 teeth has increased from 40.2% in 2011 to 51.2% in 2016.

People can use the dental health-care services provided by the health insurance system, and dentists are paid using a fee-for-service system, although some restrictions apply to the materials that can be used. For example, orthodontics for cosmetic purposes is not covered by health insurance and all costs must be paid OOP by patients.

Currently, as the population ages, the role of dental care must change. The Japanese government is currently developing a new vision for oral health care to facilitate inter-professional collaboration among physicians, nurses, care-givers, pharmacists and other health-care professionals in order to provide oral care services in the context of ICCS.

5.13 Complementary and Alternative Medicine and Traditional Medicine

5.13.1 CAM providers

Japan has a national certification programme for complementary and alternative medicine (CAM) providers. The Medical Practitioners' Act states that curative health care must be provided by doctors or dentists supplemented by co-medical professionals such as nurses, therapists or dental hygienists. However, there are government-certified professionals who practice "quasi-health-care services" independently. The most typical are massage therapists, acupuncturists, moxocauterists and osteopaths; they are authorized to open their clinics and obtain reimbursement from health insurance through prescriptions from doctors. As of 2016, there were 116 280 massage and finger pressure therapists, 116 007 acupuncturists, 114 048 moxocauterists and 63 120 Judo therapists (see also Section 4.2).

5.13.2 Kampo medicine

Japan has a tradition of herbal medicines called *kampo*, which originated from ancient Chinese medicine but are classified as pharmaceutical products (Maegawa H et al., 2014). Although *kampo* is based on Chinese formulas, these medicines have evolved to a native Japanese style over time and may differ from Chinese medicine. *Kampo* medicines are prescribed by physicians under the universal health insurance

reimbursement system in the same way as normal medicines, and can be obtained either from specialist *kampo* suppliers or from standard pharmacies.

Japan produced ¥11 309.3 billion (equivalent to US\$ 100 billion) worth of pharmaceutical products dispensed inside hospitals/clinics in 2016. Of this, only 1.4% was traditional medicine (Tsumura & Co, 2017). However, *kampo* medicines are commonly used in the Japanese health-care system despite their small share of production value.

Some *kampo* medicines can be purchased for self-medication. In total, 294 *kampo* formulas are listed in the traditional medicine standards (Maegawa H et al., 2014).

The prevalence of the use of CAM had not been well documented until recently. The MHLW funded research in 2005, which showed that a considerable proportion of patients with cancer used CAM. According to a questionnaire survey of patients treated at 16 cancer centres and 40 palliative care units, of those who replied to the questionnaire, 44.6% of patients with cancer and 25.5% of those with benign tumours used some form of CAM. Among patients with cancer, 96.2% used products such as mushrooms, herbs and shark cartilage, a much higher prevalence than qigong (3.8%), moxibustion (3.7%) and acupuncture (3.6%). Positive effects were experienced by 24.3% of CAM users with cancer, although all of them received conventional cancer therapy concurrently. However, CAM products were used without sufficient information by 57.3% of users with cancer and without consulting a doctor by 60.7% of users (Hyodo I et al., 2005). A recent survey from the USA shows that the use of CAM has led to comparatively worse results (Johnson SB et al., 2018), suggesting that there is an urgent need for research on the use of CAM for cancer patients in the Japanese context.

5.14 Health services for specific populations

Although the Japanese government provides national health-care insurance for all people living in Japan, the government provides health care for specific populations under different schemes: people living below the poverty line, those with intractable diseases and those with specific diseases.

Table 5.8 shows the list of diseases covered by both the Central Government and local government. Service coverage is different among

prefectures and some local governments add further diseases to their list.

Table 5.8 List of diseases covered by both the Central Government and local governments

Name of Law	Target population
Act on Special Aid to the Wounded and Sick Retired Soldiers	Soldiers during the Second World War
	General public with disabilities from the Second World War
Atomic Bomb Survivors' Assistance Act	Atomic bomb victims
Act on the Prevention of Infectious Diseases and Medical Care for Patients with Infectious Diseases	Emerging infectious diseases
	Tuberculosis
	First and second category infections (see Section 5.1.1)
Child Welfare Act	Children with chronic diseases (e.g. asthma, type 1 diabetes, connective tissue diseases)
	Children with tuberculosis
Services and Supports for Persons with Disabilities Act	Children with disabilities
	People with disabilities
	People with mental illness
Maternal and Child Health Act	Children with a low birth weight
Act on Compensation, etc. of Pollution-related health damage	Patients with designated diseases due to environmental reasons

Source: Compiled by the authors.

5.14.1 People living below the poverty line

Those living below the poverty line are covered by a social welfare system and are provided secure access to health care for free at the same level of care provided by the universal health insurance system. The number of people living below the poverty line has been increasing, and reached 2 165 892 people in 2014 (1.7% of total population).

The budget for this population was ¥3.7 trillion (equivalent to US\$ 33.3 billion) as a whole in 2013, including health care, housing and living expenses (75% comes from the Central Government and 25% comes from the local government), and almost 50% of this budget was dedicated to health care.

5.14.2 Public subsidy programmes for certain diseases (intractable diseases)

Japan has disease-specific research and public subsidy programmes for specific diseases that are intractable. As of 2016, 306 diseases were listed (started with four diseases in 1972 and expanded to 306 in 2015, although

this expansion was made possible by cutting benefits from disease-related public subsidy). These programmes aim to promote research into these intractable diseases while also encouraging patients to live with dignity and promoting social participation.

5.14.3 Public assistance for victims of the atomic bombs

Given the unique situation attributable to the atomic bombing of Hiroshima and Nagasaki in August 1945, the survivors of these bombings are entitled to special public assistance not available for other war casualties. These victims include those who were exposed to intra-uterine radiation at the time of the bomb blast and those who entered the bombed area within two weeks of the incident. The number of listed victims has decreased somewhat because of ageing and stood at 174 000 as of March 2014. The benefits of this special assistance include public subsidies to waive cost-sharing for health insurance. These survivors, based on their health conditions, can receive cash benefits of ¥33 800 (approximately US\$ 300) per month (146 000 people) or ¥139 460 (approximately US\$ 1230) per month (8511 people) (Ministry of Health, Labour and Welfare, 2017e). This wide eligibility criterion means that approximately 88.8% of those eligible receive the cash benefit.

5.14.4 Haemodialysis

Under the Services and Supports for Persons with Disabilities Act, dialysis patients are recognized as patient with disabilities and get health care for free even for symptoms that are not related to kidney diseases (e.g., cough). Japan had 4321 dialysis facilities with 133 538 dialysis units and 342 986 patients receiving dialysis at the end of 2015. This figure accounts for approximately 0.2% of the entire population and approximately one fifth of the world's dialysis patients (The Japanese Society for Dialysis Therapy, 2016). This reflects the small number of kidney transplants that occur (1661 in 2016, of which only 167 were cadaver transplants) and the generous coverage under the health insurance system for renal dialysis, which caps the patient's co-payment at ¥10 000 (approximately US\$ 90) per month. Renal failure used to be considered fatal until December 1962, when dialysis was added to the list of health insurance benefits. At that time, the health insurance system required a 20–30% co-payment, which would collectively amount to a considerable sum for a long-term treatment such as dialysis. In October 1972, a public subsidy was introduced to help ease the financial burden of dialysis. In October 1984, the Health Insurance Act was amended to cap the monthly

co-payment for long-term treatment such as dialysis and haemophilia at ¥10 000. On a population basis, Japan is ranked at the top in terms of the number of patients undergoing dialysis and at the bottom in terms of kidney transplant in developed countries (United States Renal Data System, 2011). Dialysis (costing ¥5 million per patient annually) costs approximately ¥1.3 trillion or 4% of total health-care expenditure in Japan. The increasing costs do not show signs of easing. The substantial increase in the number of people undergoing haemodialysis is primarily attributable to diabetic nephropathy, suggesting that there is an urgent need for controlling the complications of diabetes.

5.14.5 Organ transplantation

The history of organ transplantation in Japan dates back to when the first heart transplantation from a 21-year-old brain-dead male to a 18-year-old high-school boy who had congenital heart disease was conducted by Professor Jyuro Wada at Sapporo Medical University in 1968. It was the first-time organ transplantation conducted using a brain-dead donor in Japan, which led to several debates about the transparency of the diagnostic process for brain-death, criteria for both donors and recipients, and the technical difficulties of organ transplantation from a brain-dead donor. It took almost three decades to conduct the next organ transplantation from a brain-dead donor in 1998. Dr. Wada's transplant surgery remains a reason why organ transplantation is still uncommon in Japan.

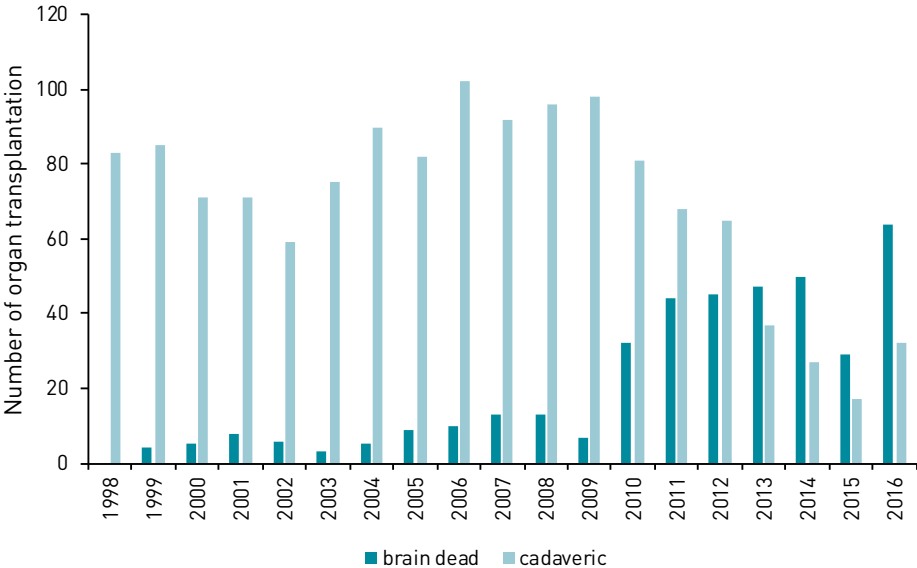
Cadaveric transplantation and brain-dead transplantation

Kidney transplantation was included in health insurance benefits in 1978, but cadaver transplantation was not available in the absence of a law that authorizes removal of organs from corpses. The Cornea and Kidney Transplantation Act was enacted in 1980 to authorize removal of the cornea and kidneys from corpses under certain conditions (Japan Organ Transplant Network, 2017a). After this Act was endorsed, 150–250 kidney transplantations and 1600–2500 corneal transplants were conducted annually. However, the widespread use of cadaver transplantation was still hampered by the prohibition of organ removal from brain-dead bodies. Surgeons had to wait until the heart-beat stopped completely before they could remove the donated organs, which compromised the success rate of transplantation. Cadaveric transplantation was somewhat enhanced by establishing the organ-sharing information network in 1983.

In October 1997, the long-awaited Organ Transplantation Act was enacted to authorize removal of donated organs from brain-dead bodies. The Act also prohibits the buying and selling of organs for commercial purposes. In a peculiar twist of legal reasoning, the law authorizes brain death only in those who had expressed a wish to donate organs of their choice and had given their consent to acknowledge brain death at the time of death. Moreover, the declaration of brain death may be made only after following strict guidelines set out in the law. Some patients therefore resorted to travelling abroad to receive transplants, provoking public protest in some countries and commercial organ transactions in others. Forty per cent of corneal transplants rely on corneas imported from abroad (Japan Organ Transplant Network, 2017a).

Responding to these concerns, the revised Organ Transplant Act was enacted in 2010, which enabled organ donation after brain death even when an individual’s intention was unclear (consent of the donor’s family is still required). Donation of organs after brain death by children under the age of 15 years has also become possible. In 2016, 32 cadaveric transplantations and 64 brain-dead transplantations were conducted (Japan Organ Transplant Network, 2017b).

Fig. 5.3 Trend of numbers of organ transplantation from brain-dead body



Source: Japan Organ Transplant Network, 2017b

Living donor organ transplantation

Living donor kidney transplantation was first conducted in 1964 and living donor partial liver transplantation was first done in 1989. The number of both living donor kidney and liver transplantations has been increasing and reached 1494 cases and 391 cases, respectively, in 2015 (The Japan Society for Transplantation and Japanese Society for Clinical Renal Transplantation, 2016; The Japanese Liver Transplantation Society, 2013).

A bone marrow bank and umbilical cord blood bank were started in early 1990; these are databases for human leukocyte antigen (HLA) typing of potential bone marrow donors and umbilical cord blood. The database contained specimens from 696 041 bone marrow and 11 287 umbilical cord blood donors by March 2017 (Japanese Red Cross Society, 2017). The bank was able to match the cumulative number of 20 309 (bone marrow) and 14 317 (umbilical cord blood) patients who underwent transplants by January 2017.

5.15 Disaster Risk Management for Health (DRM-H)

Following the great Hanshin and Awaji Earthquake in 1995, the Japan government established disaster medical assistance teams (DMATs), which rapidly dispatch trained medical teams to a disaster site. These teams respond to the demands of acute emergencies at the site, in conjunction with the MHLW and professional medical institutions in Japan (Kondo H et al., 2009). The provision of emergency relief and medical care, and the enhancement and promotion of DMATs for wide-area dispatch during disasters were formally incorporated in the Basic Plan for Disaster Prevention (the foundation for disaster-reduction programmes created in 1963) in 2005.

In 1997, at least one hospital from each prefecture was designated as a disaster-base hospital, which is to be the hub for patient treatment at the time of disaster. As of April 2015, there are a total of 694 disaster-base hospitals in Japan (Ministry of Health, Labour and Welfare, 2017i).

Although these previous disaster management efforts (DMAT and disaster-base hospitals) focused on emergency care caused mainly by crash syndrome, the Great East Japan Earthquake, for which the majority of victims were the elderly, showed the need for chronic disease control and basic sanitations. Therefore, government focus on disaster management is now expanding to these areas including medicines for

hypertension, diabetes and other chronic conditions, mental disorders, dementia, dialysis and home oxygen therapy (HOT).

As one of the disaster-prone country, Japan hosted World Conference on Disaster Risk Reduction (WCDRR) for three times in order to share lessons learnt from past natural disasters with other countries and adopted declarations on prevention and mitigation of natural disasters: in Yokohama (1994), in Kobe (2005) and in Sendai (2015). The recent one was held in Sendai, Miyagi prefecture which is one of the most affected area by the Great East Japan Earthquake in Japan. The Sendai declaration adopted at that conference has been still one of the core policy for disaster prevention and mitigation globally (United Nations, Office for Disaster Risk Reduction, 2015).

6 Principal health reforms

Chapter summary

The Japanese health-care system is currently facing two major challenges: (1) financial sustainability of and fiscal pressures on the health-care system; and (2) a rapidly ageing population. In response, several reforms have already been implemented by the Central Government and MHLW. However, population ageing and the increasing price of pharmaceuticals and medical devices has led to a consistent increase in health-related expenditures, while the decades-long economic stagnation has decreased the premium and tax revenue intended for use in the public health insurance scheme, resulting in an ever-increasing rate of health expenditure per GDP.

In order to tackle these challenges, in 2008, the government, the ruling party (Liberal Democratic Party-LDP), as well as the opposition party (Democratic Party of Japan-DPJ), together initiated debate on the sustainability of health care and long-term care. Later, in December 2010, the Cabinet pass the “Comprehensive Reform of Social Security and Tax”, a joint reform of the social security and taxation system that should improve fiscal sustainability for the Japanese social security system. The Cabinet Office indicated that the priority areas of the social security system should include measures for the support of children and child-raising, increasing the employment rate of Japanese youth, reform of medical and long-term care services, pension reform, measures against poverty and income inequalities and measures for low-income earners as cross-system issues.

The Comprehensive Reform of Social Security and Tax has remained a central tenet for healthcare and long-term care policy in Japan. Since its passage in 2010, several related laws have been enacted or amended under the umbrella of this reform plan in order to address current inefficiencies and inequity.

6.1 Analysis of recent major reforms

6.1.1 Background of recent major reforms

The 2009 Japan HiT review covered major reforms undertaken between the introduction of universal health insurance in 1961 and the passage of the Health Structural Reform Package Plan by the Diet in 2006. However, some reflections on the former reforms, their context and their limited policy impacts might help readers better understand the goals of currently ongoing reform efforts and their challenges because the Diet's reform goals have effectively remained stable since 2006.

Since the achievement of UHC in 1961, the expansion and equalization of financial protection between Employee's Health Insurance and National Health Insurance (NHI) was the first reform project until 1973 when co-payment rate of NHI beneficiaries were reduced from 50% to the current rate of 30%, and free medical care for the elderly age over 70 years under the Elderly Welfare Act became available until 1983 (Ikegami N et al., 2011; Oshio T et al., 2014; Reich MR et al., 2016). On the supply side, the expansion of supply volume of health care by increasing hospital capacity and the number of physicians was carried out in the same period. After the first "oil-shock" in 1973 when the members of the Organization of Arab Petroleum Exporting Countries proclaimed an oil embargo and the sharp increase of oil price happened, Japan faced serious economic stagnation and the Ministry of Health and Welfare shifted its policy focus to cost-containment primarily through price- and volume- control (Hashimoto H et al., 2011).

Control over hospital bed volume was mainly exercised through amendments to the Medical Care Act. The first amendment enacted in 1985 ironically resulted in a drastic increase of bed volume before its implementation, instigated by the opportunistic behaviour taken by private hospital owners. Since the passage of the second amendment to the Medical Care Act in 1992, the Ministry of Health and Welfare changed its strategy to induce functional differentiation of hospital beds into acute and chronic care for efficient resource use. This is because the chronic care beds were actually used as nursing homes for the elderly. In 2000, when the public Long Term Care Insurance (LTCI) system was introduced, the Ministry announced that it would be replacing chronic care beds with long-term institutional services for cost containment purposes by 2011.

In terms of cost containment, Japan has been relatively successful since the late 1970s despite its greying population (and the subsequent

increase in demand) and fee-for-service based payment scheme. This is the result of item-by-item price controls set through the national fee schedules, of which details are available elsewhere, including in Chapter 3 of this report (Hashimoto H et al., 2011; Ikegami N et al., 2011). In essence, Japan's reimbursement policy for medical care does not allow extra charges other than those officially set by the national fee schedule, with certain exceptions for limited types of services. Furthermore, eligibility for reimbursement is tightly regulated via detailed claim bill submissions and institutional certification conducted by regional social insurance bureaus. Under this scheme, prices set by the national fee schedule have been a useful tool for the Ministry of Health in controlling resource allocation, regulating the entry of innovative but expensive technology, and maintaining total expenditure under the macro-cap set by the Ministry of Finance.

Table 6.1 List of major reform steps since 2006

Year	Title	Key contents
2006	Health-care Structural Reform Package Act (enacted in 2008)	Fifth amendment of the Medical Care Act to induce mandated evaluation of regional health-care resource allocation plan by prefectural governments and hospital governance
		Amendment of Health Services for the Elderly Act
2008	Late-stage medical care system for the elderly	
	Future map of health-care demand for 2025 announced by the National Council on Social Security	
2010	The report on the Comprehensive Reform of Social Security and Tax	
2012	Bipartisan agreement on Comprehensive Reform of Social Security and Tax	
	Social Security System Reform Promotion Act	Ear-marked consumption tax rate raise
2013	Social Security Reform Program Act	Set the schedule for following the act and amendment by 2017, with expected increase in consumption tax rate for financial resources
2014	Act for Securing Comprehensive Medical and Long-term Care in the Community	Regional health care vision and new local governance for efficient resource allocation
		Amendment of National Health Insurance Act (2015)
		Long-term care insurance reform

Source: Compiled by the authors

Even under such tight price control, however, population ageing and the increasing price of new medicines and medical devices lead to a constant increase in expenditure, while decades-long economic stagnation has decreased premium and tax revenues for public health insurance schemes, resulted in a skyrocketing rate of health expenditure per GDP. The Japanese government realized that uncontrolled health-care expenditure constituted a threat to the system's financial sustainability, and concluded that conventional price- and volume-control efforts would not be enough to support health-care financing. Consequently, the 2006 Healthcare Structural Reform Package Act was born.

6.1.2 Recent reforms since 2006

6.1.2.1 Healthcare Structural Reform Package Act (2006)

Since 2006, the government's strategy to create financial sustainability in the health care system began to change, indicated by the passage of the Healthcare Structural Reform Package Act in 2006. For the first time, the reforms of the delivery system of health care services and the insurance system were jointly treated as a singular policy package. The 2006 Reform Act aimed to recapture the financial sustainability of the health-care system through improved efficiency of the delivery system of health care services and improved accountability of public health insurers. More specifically:

- The Medical and Health Services for the Elderly Act of 1982 was partially amended by the National Health Insurance Act and renamed as the Securing Medical Care for the Elderly Act. The amendment mandated public insurers to encourage cost-control by disease management via prevention services such as screening and following health education programmes. The amendment also stipulated a newly established national claim information database (i.e., National Receipt Database; NDB), as part of the MHLW, to closely monitor expenditure and find policy leverage for cost-control. Finally, the amendment required the establishment of a new, independent insurance scheme for the older-old (age 75 years and above) (late-stage medical care system for the elderly) in order to liberate existing public insurers from the financial pressure incurred by elderly health-care costs (details are given in Chapter 3).
- The fifth amendment of the Medical Care Act mandated prefectural governments; (1) to collect and disseminate information on

hospital functions to better support beneficiary citizens' rational choice for care utilization, and (2) to prepare specified goals/indices for performance evaluation of the regional health-care plan. The Act also mandated hospitals (especially the private sector) to improve their management transparency and organizational governance (Table 6.1).

Late-stage medical care system for the elderly (2008)

As was scheduled by the Healthcare Structural Reform Package Act in 2006, the late-stage medical care system for the elderly was introduced in 2008. Before the new system, the Medical and Health Services for the Elderly Act of 1982 required those retired and aged above 65 years to join the Elderly Health Systems (EHS), which was supported by the transfer of insurance premiums from both from the NHI and the Employees' Health Insurance system. However, due to the reduced premiums and co-payments collected from a rapidly ageing society, this transfer has come to threaten some insurers that are a part of the Employee's Health Insurance system. Since then, there has been an increasing demand for establishing new insurance systems for the elderly. The new late-stage medical care system for the elderly in 2008 mandated that 50% of the programme's budget should be funded by government tax revenue, 10% by beneficiaries' contributions, and the remainder by the transfer of insurance premiums from existing health plans (NHI and Employees' Health Insurance). Then the opposition party (Democratic Party of Japan-DPJ) responded by disseminating a campaign that the new scheme was plagued by ageism, disproportionately burdening elderly households, and in so doing, created a wave of political backlash. Although the campaign was ultimately considered to be a false accusation, the discussion behind the newly proposed care scheme revealed that the system in its current form (i.e. favouring the older population at the cost of the younger generation) is not financially sustainable (see more details in Chapter 3).

6.1.2.2 Process of comprehensive Reform of Social Security and Tax (2010–current)

The report on the Comprehensive Reform of Social Security and Tax (2010–)

Also in 2008, a government task force called the National Council for Social Security released a future map of health-care demand and its expected cost in 2025 when the population of those aged 65 years and above is predicted to reach its peak. According to the report, even with

tight price- and volume control, the increased demand for long-term care will exceed the nation's financial and medical capacity; thus, both healthcare and long-term care need drastic reform in service provision systems and financing. The report accelerated policy debate in the government and the ruling (Liberal Democratic Party-LDP), as well as in the opposition Democratic Party of Japan, especially with respect to the appropriate balance of health-care and long-term care provisions and cost-containment. The debate continued even after the change in the ruling party from LDP to DPJ after the 2010 general election. Under the DPJ ruling cabinet, the National Council for Social Security concluded the report on the Comprehensive Reform of Social Security and Tax, which was passed by the Cabinet in December 2010. This is the joint reform for the social security and taxation systems, which enables broader support for the social security system in Japan. In the Cabinet agreement, five principals for social security reform were confirmed: social inclusion, universalism for all generations, decentralization, integrated service provision, and regaining financial sustainability without future debt (Cabinet Office, Government of Japan, 2011).

Although the 2011 mega earthquake delayed the original schedule, the policy guideline finally reached Cabinet decision in February 2012.

Social Security System Reform Promotion Act (2012)

Although the report on the Comprehensive Reform of Social Security and Tax was initiated by the DPJ, the idea of the Comprehensive Reform of Tax and Social Security finally reached a bipartisan agreement in June 2012, and the Social Security System Reform Promotion Act was passed in the Diet in August 2012 (Government of Japan, 2012). The Social Security System Reform Promotion Act stipulated policy reforms for pensions, health care, long-term care and child raising. With respect to health care, the Act mandated the maintenance of universal insurance coverage, stabilization of health care financing, equalization of public insurance premiums across plans, and re-evaluation of benefit coverage.

Since the LDP returned to a ruling position in the December 2012 general election, the implementation of the Act has been overseen by the new LDP ruling Cabinet. The consumption tax rate was raised from 5% to 8% in April 2014; it was originally supposed to reach 10% in October 2015 to make financial space for the "reform" (the timeline was extended to October 2019). Increases in marginal revenue were specifically earmarked for social security expenditures including pensions, medical

care, long-term care, child welfare and welfare for households living in poverty. An estimated ¥14 trillion (US\$ 113 billion) was collected due to the tax-rate increase from 5% to 8%. Of this, approximately 10%, or ¥1.5 trillion (US\$ 12 billion), was to be invested in the regional health-care systems (medical and long-term care systems).

Box 6.1 Japanese economy and financial pressure by health-care expenditure

Since the collapse of the economic bubble in 1992, the nominal GDP of Japan has stagnated, and the primary balance of the nation has been negative. Serious austerity measures between 2004 and 2008 tentatively closed the gap, although the economic downturn due to the Lehman Shock widened the negative gap yet again. In 2009, the proportion of transfers to social security, including pensions and medical and long-term care, finally exceeded half of the nation's general expenditures. During 2008–2012, when political turmoil and a natural disaster burdened the country, the passage of the Comprehensive Reform of Tax and Social Security placed highest priority on regaining the balance by the year 2020.

Social Security Reform Program Act (2013)

Following the vision set by the Social Security Reform Promotion Act, the Social Security Reform Program Act was enacted in December 2013 (Government of Japan, 2013). The Social Security Reform Program Act translated visions into strategies to be implemented, and required due legislation and the amendment of related laws by a 2017 deadline.

The Act acknowledged that reform in the provisional systems would face several challenges, namely, dominance of the private sector, a lack of system accountability without shared visions, and closed decision-making processes in local politics. To overcome these challenges, the Act concluded that the local government should be responsible for submitting a vision for discussion on reform of the local delivery system reform, with clear goals grounded by reliable statistics of system performance (i.e., Regional Healthcare Vision). To improve local system efficiency, the Act also urged that local health-care institutions should form an effective network for the optimal allocation of resources and functional capacity to better meet local needs. The Act also required municipal government to consolidate NHI insurers at the prefectural level so that they could obtain more stable risk pools and equalize premium rates within the prefecture (Ikegami N et al., 2011).

6.1.2.3 Act for Securing Comprehensive Medical and Long-term Care in the Community (2014)

In June 2014, a reform plan for healthcare and long-term care was finalized by the enactment of the Act for Securing Comprehensive Medical and Long-term Care in the Community (Government of Japan, 2014), or a package of amendments for 19 related laws, mainly in the Medical Care Act, National Health Insurance Act, and Long-Term Care Insurance Act. Each of amendment is presented in detail below.

Amendment of the National Health Insurance Act to consolidate municipal public insurers with the prefecture authority

Another output from the Program Act was the drastic amendment of the NHI Act. Since its beginning in 1958, the municipal (or city) governments were local insurers of the system that set a municipality-specific premium rate under a nationwide standardized benefit packages. Beneficiaries of NHI, or community-based health plans, are households comprising small business or retirees who tend to have a higher health risk and lower income. With the small pool sizes, the financial status of public insurers of the NHI have been chronically in deficit and unstable, primarily subsidized by transfers from the Central Government and prefectural governments. Moreover, premium rates were unequal across municipalities, depending on their financial status. The 2015 Amendment sought to improve the financial stability of local insurers and equality in premium contributions by newly assigning an insurer management centres to the prefectural governments.

Prefectural governments are mandated to coordinate financial management, set prefecture-specific standard premium rates, and provide re-insurance to municipalities with a higher financial risk. The new scheme may reduce inequality in premium contribution across municipalities, though it is not a perfect solution because it still leaves the adjustment up to municipality insurers.

Regional Healthcare Vision and new local governance for efficient resource allocation

A “publicly-funded, privately-provided” system – tight control of cost and a laissez-faire approach to service delivery – was the major characteristics of Japanese healthcare (Hashimoto H et al., 2011). This new Act is the first governmental action to directly regulate the health-care service delivery system in local regions. It emphasizes the governance of the

local health-care system by: (1) strengthening the regulatory power of local prefectural governors, (2) enhancing the active and coordinated contributions of private/public hospitals to the governance of local systems, and (3) establishing the functional differentiation of hospitals and an effective referral networks between them by the introduction of hospital performance reports. The Act also requires every hospital to report their own medical service functions (highly acute, acute, recovery and chronic) to the prefectural governor's office for benchmarking local resources and performance. Based on the collected information, every local stakeholder is to be invited for discussion in order to decide efficient resource allocation that would appropriately meet estimated service needs.

Long-Term Care Insurance (LTCI) reform

The Long-Term Care Insurance Act was enacted in 2000 and has been periodically revised every three years. Due to ageing society, the LTCI has been facing escalating costs and recent reforms focus on cost containment, while keeping the quality and quantity of long-term care services. The latest reform was conducted in 2015: (1) before the revision, beneficiaries paid 10% of service fee as OOP, but this rate was increased to 20% post-reform and (2) the reform prescribed reduced payments from those living below the poverty line. Based on the severity of the patient's condition and need, beneficiaries are divided into seven categories, including two requiring support (levels 1 and 2) and five requiring long-term care (levels 1–5) (the lightest is requiring level 1 support and the most severe is requiring long-term care level 5) (see details in Chapter 5). Although all beneficiaries had been covered by LTCI, the two levels requiring the lightest support (level 1 and 2) are now excluded from LTCI after revision in 2015 for cost containment; they are now supposed to be covered and financed by the local government (benefit package and coverage vary among municipalities). The next round of LTCI revisions will take place in 2018.

6.1.2.4 Integrated Community Care System (ICCS) by 2025

The Integrated Community Care System (ICCS) has been proposed as a strategy to meet social needs emerging in the community because of population ageing; it would enable people to continue to live in their homes with a sense of security throughout their lifetime, regardless of their functional capacity. The MHLW portrays the ICCS as an integrated system that provides (1) medical care, (2) long-term care, (3) long-

term preventive care, (4) living support, and (5) housing services in an integrated manner to the local community (Ministry of Health, Labour and Welfare, 2017h; Tsutsui T, 2014). For this purpose, a new fund for integration of medical and long-term care services is to be collected in each prefectural government by using expected additional revenue from the increase in the consumption tax rate.

6.1.3 Political analysis of recent reforms by the Central Government

The key characteristics of a recent series of major reforms are three-fold. First, the Cabinet directly leads the debate to break through political inertia and bureaucratic silos that have historically deterred major reforms. Second, the central theme of health-care reform is clearly linked to regaining the nation's primary balance in the face of population ageing and economic difficulties. Third, for these purposes, the Program Act was used to set the agenda of the reform, deadlines, and due budget sources (e.g., raising consumption tax rate) in order to push the reform debate forward before specific amendments of individual laws were discussed.

Although the time period between 2008 and 2012 was politically dynamic – four prime ministers, two transitions between a conservative liberal party (LDP, current ruling party) and a radical liberal party (DPJ) – the core agenda for regaining the primary balance has been consistently treated as a bipartisan agenda, which also provided political readiness for the reform debate in the Diet. The current Abe administration kept expenditure increase by US\$ 44.5 billion per year, and keep going.

The benefits of this new policy making processes can be seen in the powerful leadership exercised by the Cabinet, which made a considerable move forward towards the reform goals. However, this drastic change in policy making processes created logistical difficulties because the MHLW, which usually implements health care-related strategies and policies, was not substantially involved in the decision-making process. Despite the vision presented by the Program Act, it has been inconsistently translated by different bureaus in the MHLW because inter-sectoral governance in the Ministry remains weak.

The response of local governments to the new scheme is also slow and heterogeneous, because the local prefectural governments are diverse in terms of size, financial and human resource capacity, demographic structure and political governance. Consequently, whether or not the new reform scheme is successfully translated into local implementation

requires careful monitoring, else it might lead to the widening of inequality in the performance of the health care system across regions. This would be contrary to the principle of “equal benefit for all”, that has been touted since Japan’s universal health insurance system was established.

Finally, another major challenge is the provision of financial resources for enacting the reforms. Raising the consumption tax is the only source of funding expected to support the reforms. However, the current Abe Cabinet has postponed the schedule of raising the consumption tax rate to 10%: from October 2015 to April 2017, and most recently even further October 2019 because of political and economic concerns that further increases would unduly weaken the economy. As an increase of consumption tax is highly political matter, the future progress of reform process is still unclear.

6.2 Future developments

As presented in the previous section, due legislation has been enacted, and implementation of each act is now in progress. The core policy focus is to address the financial balance between the increasing demand due to population ageing and financial sustainability under limited economic growth. The Fiscal System Council in the Ministry of Finance has tentatively set the upper limit of social security expenditure growth at ¥500 billion (or US\$ 5 billion) per year as “natural growth due to population ageing.” A major fee schedule amendment for medical and long-term care services is expected in April 2018, without any financial provisions to cover its growth. The current Abe Cabinet announced in July 2016 that under expected budget restrictions, the priority will instead be welfare programmes designed to enhance child development and female participation in the labour force.

Besides financial issues, the tactical implementation of the ICCS remains unclear: e.g., how to design incentives to invite local stakeholders to the community discussion table, or who will and how to coordinate diverse interests into a local consensus on efficient resource allocation. Both the public and private sectors in the local systems for providing health and long-term care have their own sunk costs for the current operations. If the local community faces an “over-supply,” which is likely, how to reach consensus and trade between interest parties needs clear rules and governance.” The Ministry itself still suffers from bureaucratic red tape, and their definition of “ICCS” is not unanimously shared and standardized

across bureaus. A new style of governance to foster inter-sectoral coordination is required.

Despite the expected challenges ahead, the concept of the ICCS is regarded as promising for shifting from the traditional health-care model at the institutional level to the integrated, community-based system (Tsutsui T, 2014). It covers the patients' value chains in the community — from family practice, acute care rehabilitation, long-term care, and palliative care. The ICCS is also likely to meet the expanding needs of the community's elderly, who are more likely to live alone, with more limited social and economic capacity than ever, and are especially in need of non-medical support to maintain their social participation and functioning in the community (Tsutsui T, 2014).

Traditionally, public health nurses have played a central role in community building and public health practices in Japan. In the ICCS, it remains to be seen whether public health nurses could act as local coordinators for linking medical professionals with welfare programme workers and/or community volunteers.

Finally, the new health-care system requires each Japanese citizen to seriously reflect and share vision on what value would be added to Japanese society through the social security system. As proposed in *"Japan Vision: Health Care 2035,"* a report for the Health Minister by young Japanese health policy leaders in June 2015, the new health system should be based on the social values of fairness and solidarity, while building on individual autonomy and active engagement in community (Miyata H et al., 2015).

7 Assessment of the health system

Chapter summary

For the past decades, the health system in Japan has played a vital role in ensuring that Japan has been one of the healthiest countries in the world. Although overall health system performance has been improving, many challenges still remain: the sustainability of health-care financing, increasing inequity within the population, and an ageing population.

This chapter provides a comprehensive analysis of the health-care system in terms of financial protection, equity in financing, user experience, equity of access to health care, health outcomes, health service outcomes, quality of care, health system efficiency, and transparency and accountability.

7.1 Stated objectives of the health system

As the previous 2009 Japan HiT review described, Article 25 of the Constitution provides the fundamental basis for social security and health policy in post-War Japan. The Article states that “all people shall have the right to maintain the minimum standards of wholesome and cultured living”, and Item 2 further stipulates that “in all spheres of life, the State shall use its endeavours for the promotion and extension of social welfare and security, and of public health.” (Government of Japan, 1946).

Originally, the launch of the universal health insurance system for formal sector workers in 1927 was for military purposes. However, post-War policy debates in the 1950s strived for the creation of a welfare state that supports equality among its citizens under the spirit of Article 25, resulting in the establishment of universal health insurance coverage in 1961 by amending the National Health Insurance Act (Hashimoto H et al., 2011). Since then, equal access and fair contribution have been a central tenet of the Japanese health care policy (Hashimoto H et al., 2011; Oshio T et al., 2014).

Since the late 1970s, when the Japanese economy slowed down and the demand for healthcare increased because of population ageing, cost

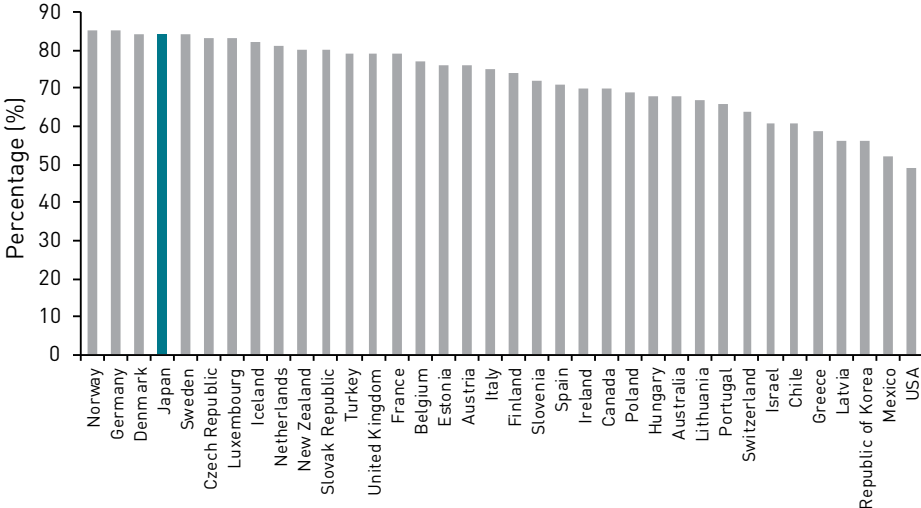
control has become a significant policy theme during discussions on maintaining the sustainability of the health-care system. As was detailed in the previous chapter, in principle, strict price control has been observed on the supply side while a free access policy has been maintained on the demand side until present. Even under the current reform vision, where regaining a financial primary balance is set as the nation’s top priority, reforms still emphasize the maintenance of universal insurance coverage and equalization of public insurance premium contributions across plans. Some criticize that prioritizing equity inherently abandons the means to achieve quality and efficiency. The most recent policy vision for 2035 by the former Minister of Health maintains universal coverage as the key health policy, while also emphasizing citizen’s autonomy in making rational choices and solidarity among citizens as a norm basis for designing social security to achieve quality healthcare with financial sustainability (Miyata H et al., 2015; Shibuya K, 2016).

7.2 Financial protection and equity in financing

7.2.1 Financial protection

As of 2016, 84% of the total health expenditure in Japan is covered by public funds, ranking the fourth highest among OECD countries after Norway, Germany and Denmark (Fig. 7.1).

Fig. 7.1 Percentage share of government transfer and compulsory contribution per total health expenditure in 2016



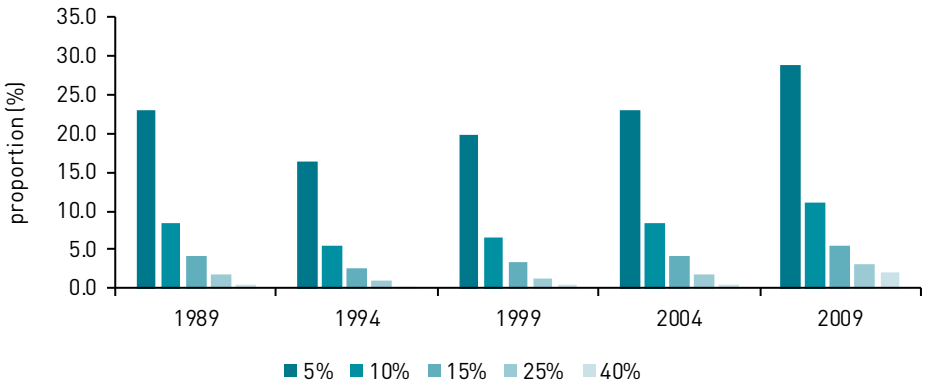
Source: OECD, 2018a

Since 2003, the co-payment rate has been set at 30% for all beneficiaries between 6 and 69 years of age, with a monthly upper ceiling adjusted to household income so as to protect households from catastrophic payments. Moreover, premium exemptions for low-income households, co-payment subsidies for children, and subsidy policies for patients with certain conditions (i.e. chronic and intractable) are also intended to exercise a protective function against catastrophic health-care payments, suggesting that there are multiple mechanisms in place to deter household financial crises when it comes to health-care expenditure.

The 2007 Survey of Social Security Status conducted by the National Institute of Population and Social Security Research found that 0.76% of surveyed households reported that they withheld a health-care visit due to economic concerns in the previous year. Simple comparison of the number between 2007 and 2012 survey was difficult because the items in the questionnaire had changed, but the proportion that withheld a health-care visit due to economic concerns in 2012 was up to 2.9% among those aged between 20–65 years, and 1.1% in those 65 years and above (National Institute of Population and Social Security Research, 2017).

In spite of Japan’s relatively excellent in financial protection, recent time trend analyses suggest that this robust protection is weakening over time because of decreasing household income in both real and nominal terms due to economic stagnation since the late 1990s. As Fig. 7.2 depicts, the share of health-care expenditure per household’s non-food expenditure is increasing over time.

Fig. 7.2 Proportion (%) of household health expenditure as share of monthly household expenditure (non-food)



Note: Health-care expenditure includes OOP payment for outpatient and inpatient services (medical as well as dental care), and prescribed medication.

Source: Statistics Bureau, Ministry of Internal Affairs and Communication, 2018, calculated by the authors

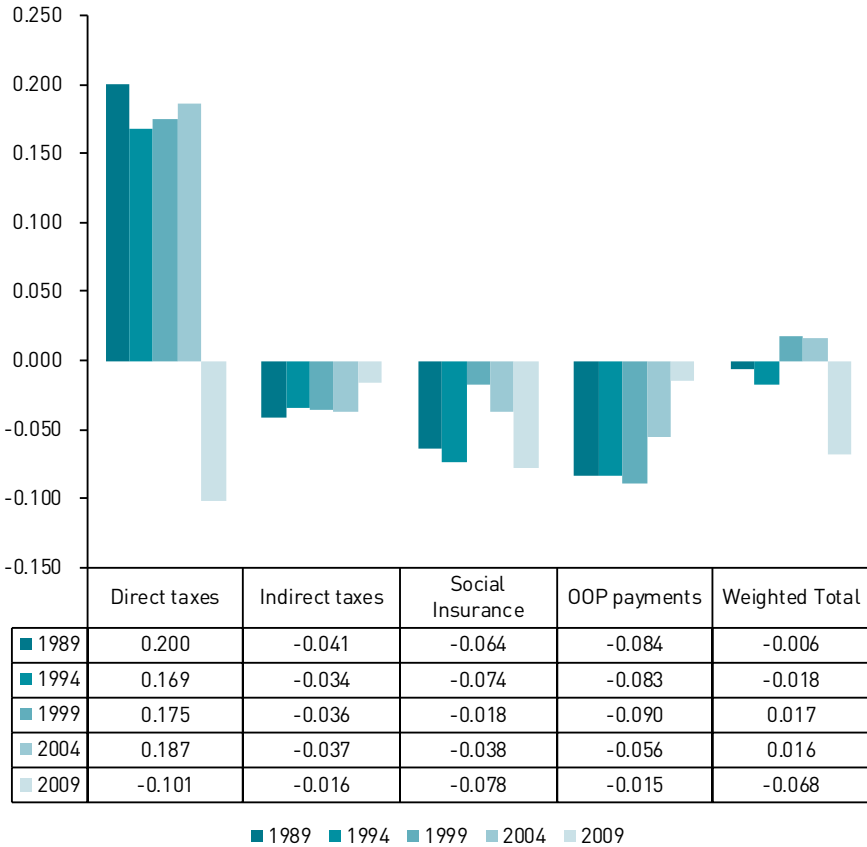
It should be noted that because the policy is effectively universal with only a rough classification of income level, the poor household has to pay relatively higher amount of OOP compared with the high-income household (i.e., the cap is set at the same rate from annual income US\$ 33 300 to US\$ 69 360). Moreover, the subsidy to protect households from financial burden may lead to a moral hazard and related overuse of health-care services in middle–high–income households, rather than effectively protecting low-income households from catastrophic OOP payment. Due to limited data availability, only a restricted empirical assessment can be conducted on this issue.

Even under universal health insurance, another emerging issue remains — an increasing proportion of the population in Japan that may be left without effective public health insurance. Since Japanese public insurance is divided into formal and informal sectors, a recent increase in non-full-time workers without production assets may lead to a higher risk of no-insurance status. Although there are no official statistics on non-insured members of the population, one estimate suggests that approximately 1.3% of the population is without effective health insurance coverage as of 2007 (Hashimoto H et al., 2011). If the same working definition is adopted (those who paid any direct tax but no health insurance premium, and those who do not belong to the NHI scheme), the number would increase to 3.2% as of 2013 (estimated with microdata from the Comprehensive Survey of Living Conditions, 2013).

7.2.2 Equity in financing

As Oshio and colleagues clearly described in the World Bank study report in 2014, the Japanese public health insurance system has been financed by a hybrid of social insurance premiums and government tax transfers to foster financially weak health plans for equal benefit (Oshio T et al., 2014). The re-distributional function to equalize household income was strengthened mainly through an inter-generational mechanism of tax transfers and benefit provisions of a pay-as-you-go based social security for the elderly population, rather than by an intra-generational mechanism of taxation. Indeed, the re-distributional function of social security has been extended since the 1980s in parallel with population ageing.

Fig. 7.3 Kakwani indices as a measure of progressivity in health-care financial contribution by households

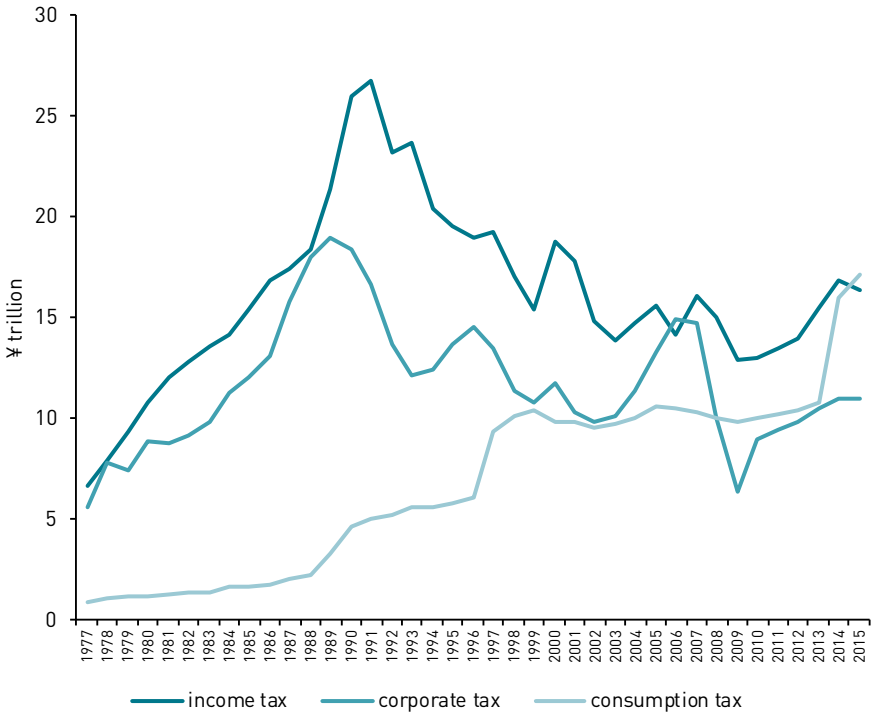


Source: Calculated by the authors

By using microdata from the National Survey of Family Income and Expenditure, the progressivity of health-care contribution was evaluated following the method proposed (Fig. 7.3) (O’Donnell O et al., 2008). The Kakwani index represents whether the contribution is fair across households with different levels of ability to pay (i.e., monthly expenses and tax contribution). Positive numbers indicate that richer households pay a relatively larger contribution, while negative ones indicate that the burden rests disproportionately on poorer households. As Fig. 7.3 shows, contribution through indirect taxes (consumption tax and value-added tax on tobacco and alcohol), social insurance premium, and out-of-pocket (OOP) payments show negative indices, suggesting that relatively poorer households contribute more regressively. On the contrary, direct tax shows strong and positive values due to progressive taxation. Finally,

the weighted total effect was nearly zero, indicating that the regressivity of indirect taxes, social insurance premiums and OOP payments was cancelled out by direct tax contributions. However, the trend was reversed in 2009: the direct tax showed strong negative values, suggesting that the burden of financial contribution was disproportionately incurred on poorer households. It should be noted that the year 2009 was marked by global economic shock, resulting in the sharp decline of household income, pension benefits and government tax revenue (Fig. 7.4). It is estimated that this unfair financial contribution would be worsening in recent years.

Fig. 7.4 Time trend of tax revenues (general tax)



Source: Ministry of Finance, 2017b

7.3 User experience and equity of access to health care

7.3.1 User experience

Despite high performance in equity of access and financial protection so far, some cross-country surveys on consumer satisfaction contradictorily revealed that Japanese customers/patients are less satisfied with their current health-care system compared to those in other countries (e.g. International Social Survey Program) (Murata H et al., 2014). However, the

comparison of user experiences in cross-country settings suffers from a methodological flaw: rated satisfaction should depend highly on the consumer's expectation of their system as it is embedded in the social, historical and political contexts unique to each country. Thereby, cross-country comparisons preclude the fair evaluation of process quality and service provision outcomes.

Within a country, a time trend analysis of consumer perceptions about the performance of their health-care system would better prove any trending change in the system's "responsiveness" to patients' expectations. The Patient's Behavior Survey conducted every 3 years by MHLW (<http://www.mhlw.go.jp/english/database/db-hss/pbs.html>) revealed that patient satisfaction was prevalent and improving over time, though low quality remained a problem in smaller, chronic care hospitals in Japan. Moreover, the survey results indicated that information provided by health professionals to effectively aid patients in choosing treatment and seeking out quality services needed further improvement. In particular, the Bureau of Health Service in the MHLW has been preparing an information platform to better inform patients who suffer from cancer since the enactment of Cancer Control Act in 2006. Although some information has been publicly available, the contents remain to be improved to efficiently support consumer's decision making.

Thanks to the free access policy and high density of clinics/hospitals in the community, waiting time for specialty services is rarely a complaint. However, some have claimed that speciality services are harder to come by in rural areas because of a skewed distribution of specialists who favour urban centres. Tanihara et al. (2011) indicated that the unequal geographical distribution of physicians has not changed since the late 1980s, despite an increase in physician numbers per population of 100 000 during the same period (Tanihara S et al., 2011).

7.3.2 Equity of access to health care

Horizontal equity in health-care access

Equity of access to health care could be assessed from several viewpoints. In this section, horizontal equity in health-care access—defined as equal treatment for equal needs (ETEN) following Wagstaff et al. was assessed (Watanabe R et al., 2012). Briefly, two types of the concentration index were calculated: actual health-care visits over a household's income level, and expected health-care needs based on

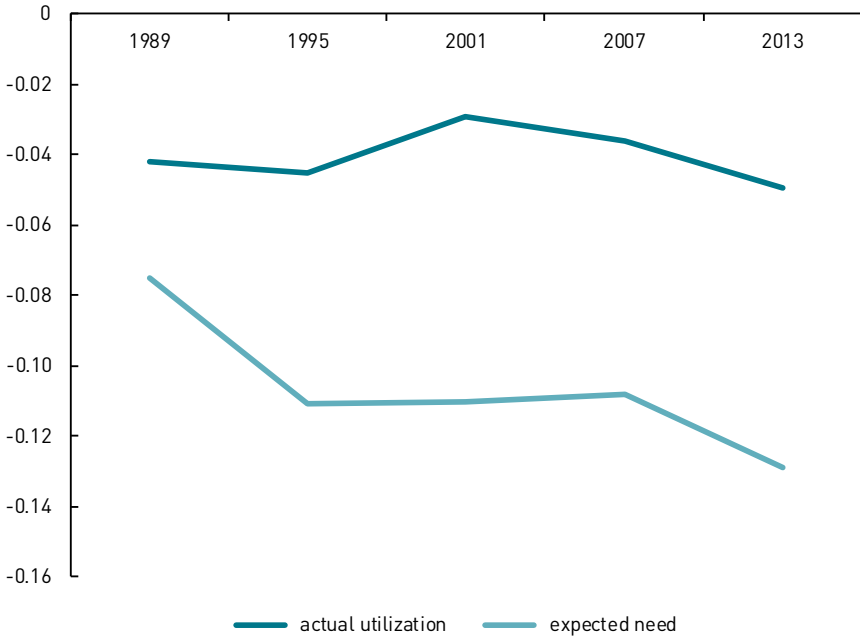
demographic and clinical conditions. The difference between the two is the index of “horizontal inequality” (HI).

By using cross-sectional, nationally representative household surveys (the Comprehensive Survey of People’s Living Conditions) from 1986 to 2007, Watanabe and Hashimoto (2012) revealed that the HI was relatively low in Japan, though the degree of HI was increasing over time for people aged below 65 years, while the HI was minimal and constant for those aged above 65 years.

Two additional waves of the Survey (2010 and 2013) were obtained for this HiT report and the assessment was redone to see the impact of the global economic shock in 2008 and the subsequent decrease in household income in real terms on the HI of health-care access. During this period, despite a sharp decline in GDP growth, the Japanese Government did not take strong austerity measures to cut down health-care expenditure, but instead modified the fee schedule to allow marginal growth due to population ageing. On the demand side, the elderly with a high income who used to pay 10% co-payment were asked for 20% co-payment since 2003, and further increased to 30% since 2006. Otherwise, the co-payment rate was amended to 20% for all the elderly above 70 years regardless of household income levels, although the government postponed this change until 2014. The Ministry estimated that about 6–7% of elderly households belong to the high-income group (Ministry of Health, Labour and Welfare, 2012e).

The results are presented in Fig. 7.5. The concentration indices for actual health-care service use among those aged 20 years and above were constant and negative, suggesting that lower income households actually utilized more of the services. This can be explained by the fact that utilization has been high among the elderly with a lower income, due to increasing health-care demand and a reduced co-payment rate compared to younger households. The gap between the actual utilization and expected health needs, or the HI, was negative, suggesting that people with a lower household income were likely to withdraw health-care use despite their needs. The inequality faced by low-income households was the strongest in 2001, then recovered up to around -0.05 . The change in the HI was mainly attributable to the change in estimated health-care needs, which hit its lowest point at -0.12 in 1998 just after the International Monetary Fund (IMF) currency shock in 1997, and then slowly recovered to -0.08 in 2013.

Fig. 7.5 Horizontal equity in access to healthcare (concentration indices over household income) all ages 20+ years

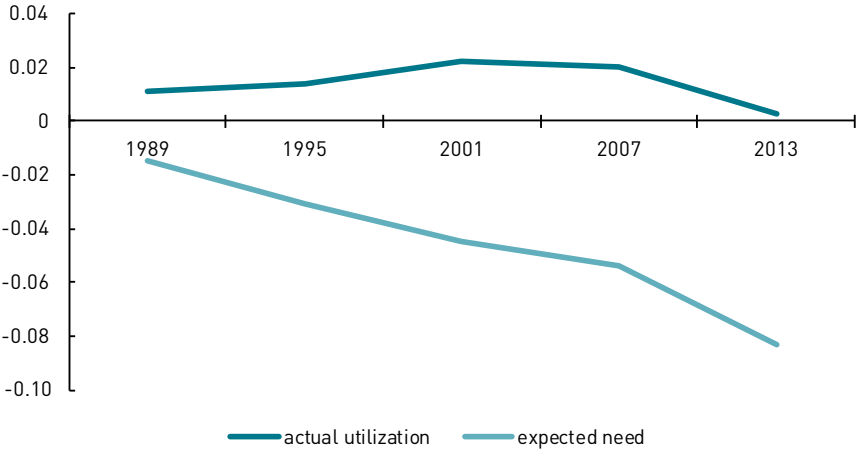


Note: Actual utilization: concentration indices for actual health-care use, expected need: concentration indices for expected health-care needs (estimated health status)

Source: Estimated by the authors based on (Ministry of Health, Labour and Welfare, 2016d)

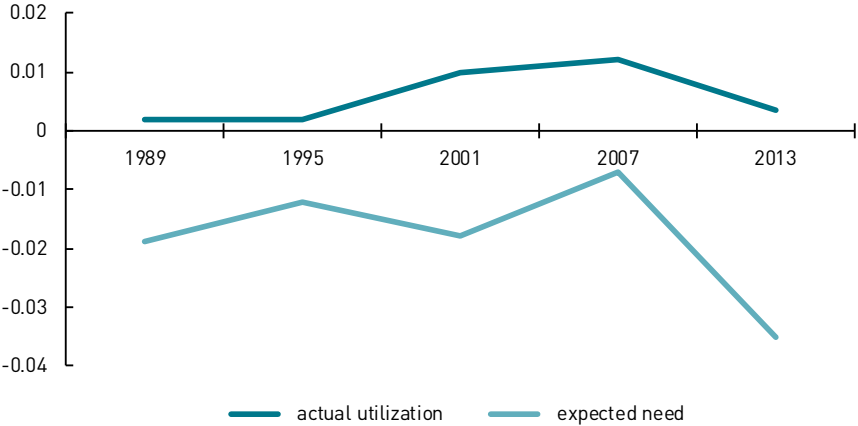
Compared to their younger counterparts that faced an increasing gap in access, the HI has been small among people aged above 65 years, presumably due to favourable reductions in the co-payment rate reductions for the elderly population, which have been successful in equalizing health-care utilization regardless of income levels (Fig. 7.6). The introduction of an increase in the co-payment rate specifically for the high-income elderly in 2010 seemed to result in improved horizontal equality as of 2010. However, a sharp decline in 2013 may require careful monitoring, since it may be an early sign of declined household capacity to pay for healthcare due to economic stagnation. Once the latest data for 2016 become available, further monitoring is also needed after 2014, when the co-payment rates for the elderly went up to 20% and the consumption tax rate was simultaneously increased from 5% to 8%.

Fig. 7.6a Horizontal equity in access to healthcare (concentration indices over household income) ages 20–64 years



Note: Actual utilization: concentration indices for actual health-care use, expected need: concentration indices for expected health-care needs (estimated health status)
Source: Estimated by the authors based on (Ministry of Health, Labour and Welfare, 2016d)

Fig. 7.6b Horizontal equity in access to healthcare (concentration indices over household income) ages 65+ years

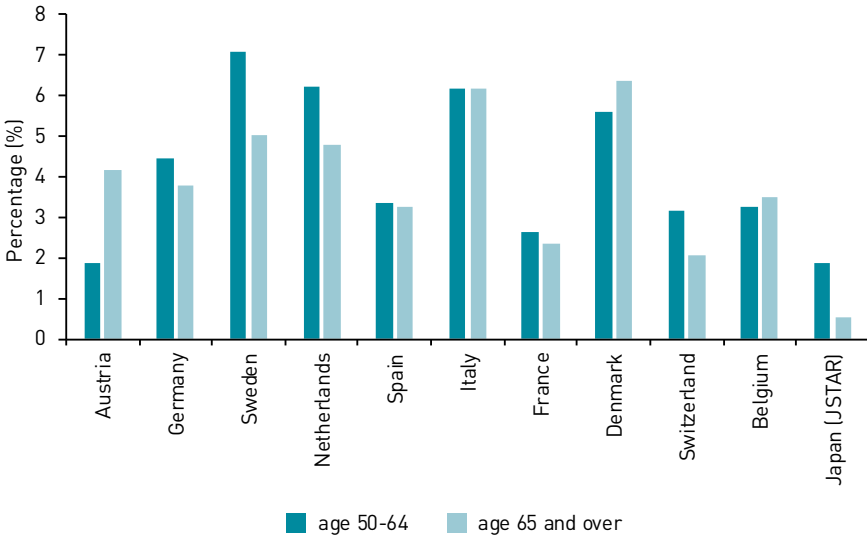


Notes: Actual utilization: concentration indices for actual health-care use, expected need: concentration indices for expected health-care needs (estimated health status)
Source: Estimated by the authors based on (Ministry of Health, Labour and Welfare, 2016d)

For the purpose of a cross-country comparison, the Japanese Study of Ageing and Retirement (JSTAR) and its sister survey in Europe (Study of Health and Retirement in Europe [SHARE]) were compared. Both surveys are a part of a global harmonization of elderly panel surveys led by the US Health and Retirement Study. Since JSTAR took a random, not probabilistic, sample from selected Japanese municipalities, the results should be interpreted with caution.

Fig. 7.7 shows that the proportion of those who claimed any foregone healthcare due to financial concerns in the previous year is lower in Japan than in Europe, especially among those above 65 years, presumably due to reduced co-payments. Nishi et al. (2002) analysed a nationally representative household survey and reported that the reduced co-payment rate was significantly associated with better health status among those above 70 years, especially with regard to mental health (Nishi A et al., 2012). However, Shigeoka (2014) did not identify any health benefit in terms of reduced mortality, despite increased utilization due to the reduction in co-payment rate (Shigeoka H, 2014).

Fig. 7.7 People who experienced any foregone care for financial reasons in the previous year (%)



Source: SHARE Wave1, 2004–2005 and JSTAR Wave2, 2009

Equity of access in terms of resource distribution and cultural gap

As mentioned earlier, physicians and subspecialists are unequally distributed towards urban settings; Sakata et al. (2016) conducted a time trend analysis of the regional distribution of nurses between 2002 and 2011, and concluded that despite an increase in the number of nurses per 100 000 population, their distribution was biased by a reimbursement policy that motivated acute care hospitals in urban settings to increase nurse-per-bed ratios for better payment (even acute care hospitals face biased nurse distribution between urban and rural settings) (Sakata Y et al., 2016).

It is worth noting that the Japanese health-care system harbours a cultural gap when it comes to the needs of ethnic minorities, especially with respect to language barriers. Some efforts are being made towards 2020 Tokyo Olympic and Paralympic games including interpretation services in multi languages. However, systematic and empirical evidence is scarce, making it difficult to identify the magnitude and severity of this particular problem. There are some case reports describing poor accessibility due to economic and language barriers among minority populations, which can lead to fatal consequences in the worst-case scenario (Sawada T, 2007).

7.4 Health outcomes, health service outcomes and quality of care

7.4.1 Equity in outcomes

As is mentioned in Chapter 1, drastic improvements in population health in Japan since 1970 have been attributed to the rapid decrease in deaths due to stroke, which was likely the result of health education on the risk of hypertension by community health practitioners, improved housing conditions, dietary intake, and access to antihypertensive medication (Ikeda N et al., 2011). For descriptive statistics of and trends in population health (e.g. life expectancy, neonatal mortality, maternal mortality), please refer to Chapter 1.

Domestic disparity in life expectancy

Although Japanese people enjoy excellent population health, there remains a persistent discrepancy across the nation and the disparity in life expectancy across prefectures narrowed until the 1990s, but again began to widen afterwards. Nomura et al. reported in 2017 that the gaps between prefectures with the lowest and highest life expectancies and

healthy life expectancies have widened between 1990 and 2015, from 2.5 to 3.1 years and from 2.3 to 2.7 years (see details in Table 1.3 in Chapter 1), respectively. Although overall age-standardized death rates decreased by 29.0% (28.7–29.3%) from 1990 to 2015, the rates of mortality decline during this period substantially varied across prefectures, ranging from -32.4% (-34.8 to -30.0) to -22.0% (-20.4 to -20.1) (Nomura S et al., 2017).

What determines the persistent difference across prefectures remains to be studied including the relationship between social determinants and health disparities. There was no correlation between health outcomes and the number of human resources for health and health-care expenditure by prefecture level, and detailed risk-factor analysis at prefecture level is also needed. For now, it is known that there is a substantial and systematic difference across prefectures in the prevalence of known risk factors such as smoking, as well as socioeconomic indicators such as mean household income, educational attainment, industrial structures and subsequent unemployment rates.

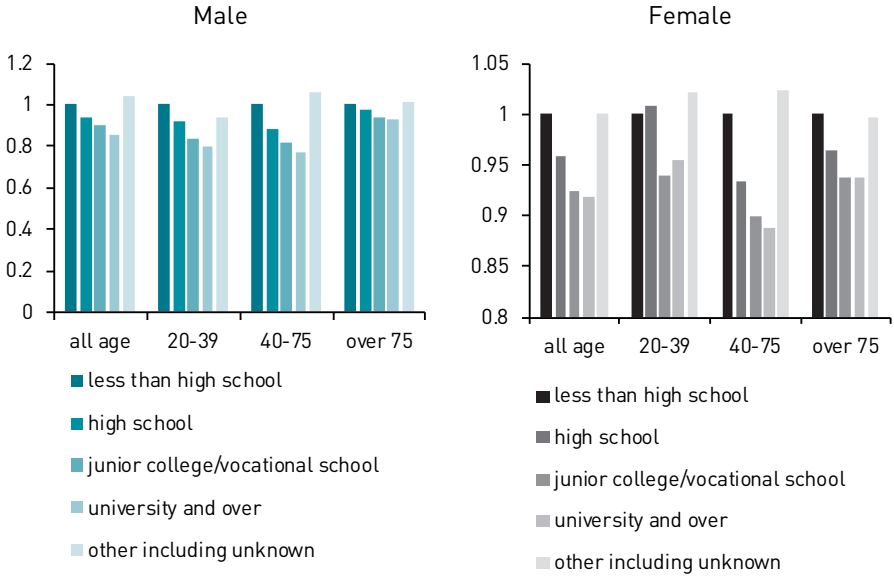
Health disparity across socioeconomic conditions

Since Japanese vital statistics do not include information regarding socioeconomic status in terms of educational background and household income, limited information is available on socioeconomic disparities in disease incidence, survival rates and mortality at the national level.

In a large, epidemiological cohort (The Japan Collaborative Cohort Study for Evaluation of Cancer Risk; JACC), Fujino and colleagues (2005) showed mortality differences across different levels of educational attainment (Fujino Y et al., 2005). The study revealed a significant association between all causes of mortality and educational attainment among adults above 40 years of age who participated in community health check-ups.

The authors probabilistically linked census microdata with death records to address mortality difference across educational attainment, following Blakely and Salmond (2002) (Blakely T et al., 2002). The results indicated that the education-related disparity in all-cause mortality was more salient among men, and those in middle-aged and early elderly (Fig. 7.8).

Fig. 7.8 All-cause mortality risk ratio by educational attainment in 2010



Sources: National Census, 2010 and vital statistics, November 2010–April 2011, calculated by the authors

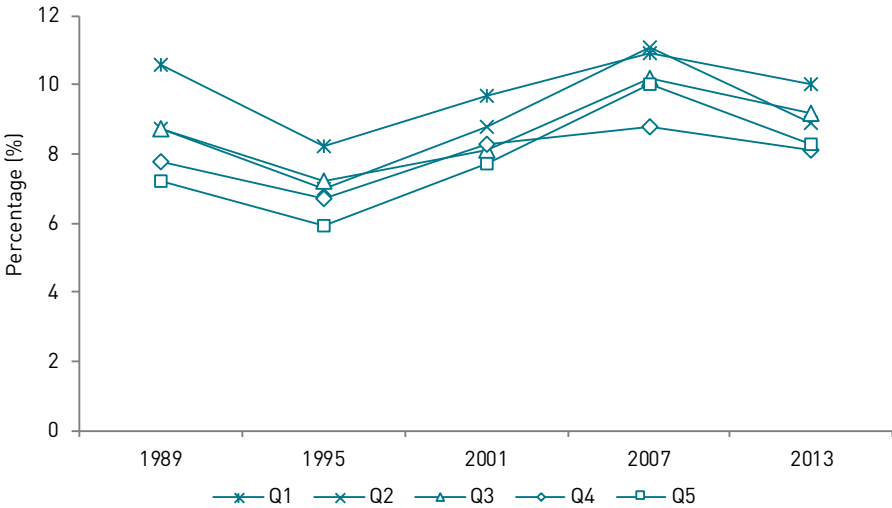
Wada et al. (2012) reported that occupational class was significantly associated with mortality risk (Wada K et al., 2012). Contrary to findings in Europe and the USA, time trend analysis showed that the economic downturn had a negative impact in Japan by raising mortality in the “manager class” rather than in blue-collar workers. Although the trend is most clearly observed in suicide rates, it is also visible in the rates of cancer mortality. Otherwise, due to the lack of socioeconomic information in Japanese vital statistics records, there is no empirical data regarding socioeconomic disparities in mortality across income levels or educational attainment levels in a nationally representative sample.

Income-related disparities regarding self-reported health status were reported by Kachi et al. (2013) (Kachi Y et al., 2013), with the use of nationally representative household surveys between 1986 and 2007. In this report, data from 2010 and 2013 were added in order to see the trends after the global economic downturn in 2008 (Fig. 7.9 and 7.10). As already reported, the discrepancy in subjective health status across income quintiles narrowed up until 2004, but then resumed widening after-wards. Notably, data indicated a sharp health decline among the

lowest quintile relative to other strata, suggesting that economic hardship had most affected those with the lowest household income.

Since socioeconomic data were not linked with health-care utilization records, there are virtually no empirical data regarding socioeconomic disparities in clinical outcomes at this stage. Ito et al. (2014) used a population-based cancer registry in the Osaka area and found that there was consistently a gap in cancer survival across the regional deprivation index; the disparity remained throughout the period 1993–2004, despite improved survival overall (Ito Y et al., 2014).

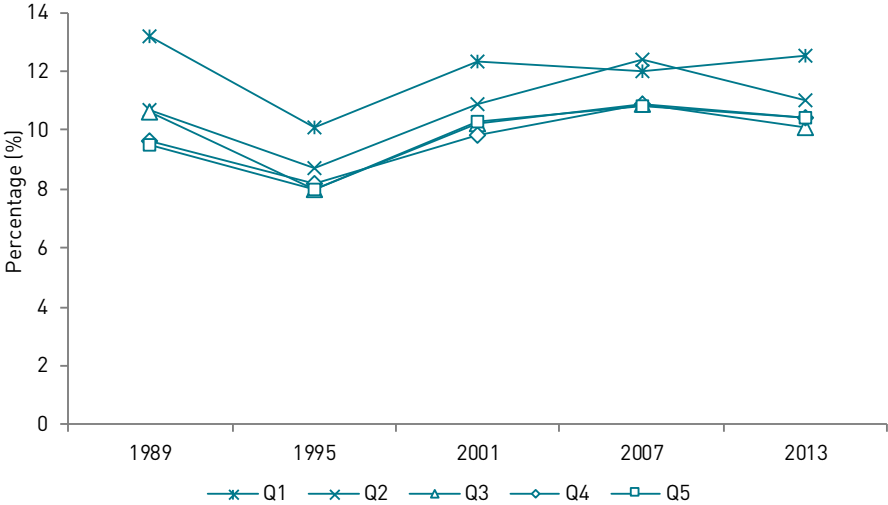
Fig. 7.9 Self-reported poor health prevalence by income quintile (male)



Note: Q1 is the lowest income quint, while Q5 is the highest income quintile.

Sources: Comprehensive survey of living conditions, Ministry of Health, Welfare, and Labour, 1986–2013. Estimated data for 1986–2007 derived from Kachi et al. 2013 by courtesy of Dr Yuko Kachi. Estimation for 2007b, 2010 and 2013 by the authors, following the published estimation method.

Fig. 7.10 Self-reported poor health prevalence by income quintile (female)



Note: Q1 is the lowest income quint, while Q5 is the highest income quintile.
Sources: Comprehensive survey of living conditions, Ministry of Health, Welfare, and Labour, 1986–2013. Estimated data for 1986–2007 derived from Kachi et al. 2013 by courtesy of Dr Yuko Kachi. Estimation for 2007b, 2010 and 2013 by the authors, following the published estimation method.

7.4.2 Health service and quality of care

A free access policy, universal insurance coverage and several subsidized measures to support health-care access for those with greater needs (e.g. children, the elderly and disabled persons) should theoretically result in good health outcomes for the Japanese population. Indeed, some attribute Japan’s excellence in population health (e.g. longevity) to high-quality health care and secure accessibility. However, there is very limited evidence on the effective coverage of health-care services in Japan.

Preventive care

Free immunization programmes for children are scheduled for Hib, hepatitis B, BCG, measles, rubella, DPT-IPV (or DT), varicella, pneumococcus and Japanese encephalitis. Vaccination out of schedule must be paid for OOP. Otherwise, vaccination for rotavirus, mumps, hepatitis A, and influenza are voluntary and paid for OOP, with various subsidies across municipalities. Pneumococcal vaccine for older people (above 65 years) recently became available with a co-payment that also varies across municipalities.

Surprisingly, there are no official statistics on effective vaccination coverage in Japan. For child vaccinations, the MHLW has published information on the target population and the reported number of vaccines provided at health-care institutions (<http://www.mhlw.go.jp/topics/bcg/other/5.html>). However, whether the vaccines successfully reached the target population as scheduled is not validated by these published numbers. According to studies based on household surveys, the rate stays at around only 90%, and barely exceeds 95% (Baba K et al., 2011; Ueda M et al., 2014).

Although provided free, whether the coverage of routine vaccinations is equally distributed or not remains another health policy question to be answered. In metropolitan and urban settings, Ueda et al. (2014) reported that children of mothers under the age of 25 years, who were less educated, and had an at-work status without childcare leave were more likely to miss timely vaccinations for measles and DPT (Ueda M et al., 2014). Combination and multiple vaccinations are not widely used in the Japanese vaccination policy partly because the government takes defensive positions against civil activists' law suits to accuse the government of "failed regulation to prevent side effects of vaccination" (Hanley SJB et al., 2015). Consequently, the Japanese vaccine schedule is very complex, which places temporal and financial pressures on parents. Cultural and language barriers further curtail the coverage rate of children of foreign origin (Tsukui S et al., 2009).

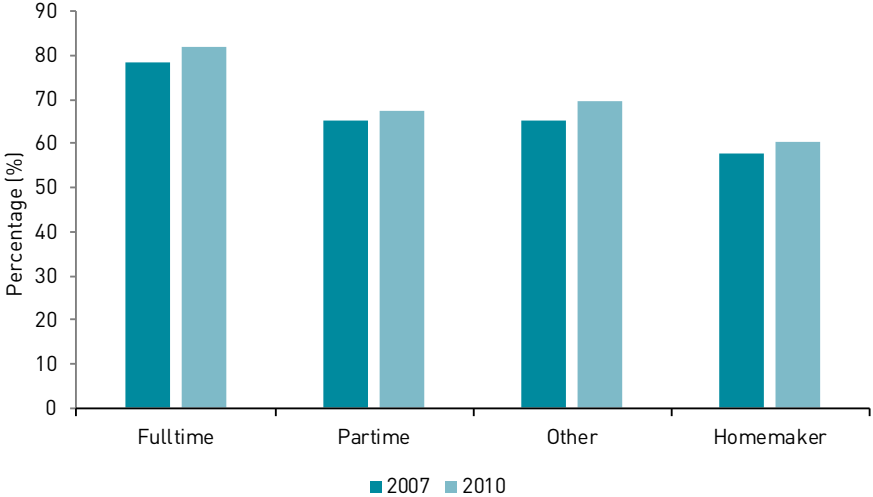
For voluntary vaccinations with OOP payments, the coverage rate is substantially lower, and household income and the degree of subsidy by the municipality are known to be influential in determining coverage rates (Shono A et al., 2015).

Health check-up and screening

The Japanese Government introduced the Specific Health Check-ups and Specific Health Guidance (SHCSHG) policy in 2008, with the intention of controlling health expenditure by screening and early intervention for chronic conditions such as the metabolic syndrome (see more details in Chapter 5). Since the introduction of the policy, the check-up participation rate has significantly increased. However, in addition to the limited evidence on the effectiveness of some health check-ups (Matsuda S, 2015), there remains a substantial discrepancy in check-up rates across public health plans tightly linked to work status. Full-time workers covered by company-based plans have the highest check-up rates at around 90%, while workers in informal sectors, part-time employees,

and unemployed persons (e.g. home-makers) had substantially lower rate (Fig. 7.11). The introduction of this “check-up for all” policy has facilitated check-ups for fulltime workers disproportionately, resulting in a significantly widening disparity across employment status.

Fig. 7.11 Check-up coverage before/after policy introduction (%)

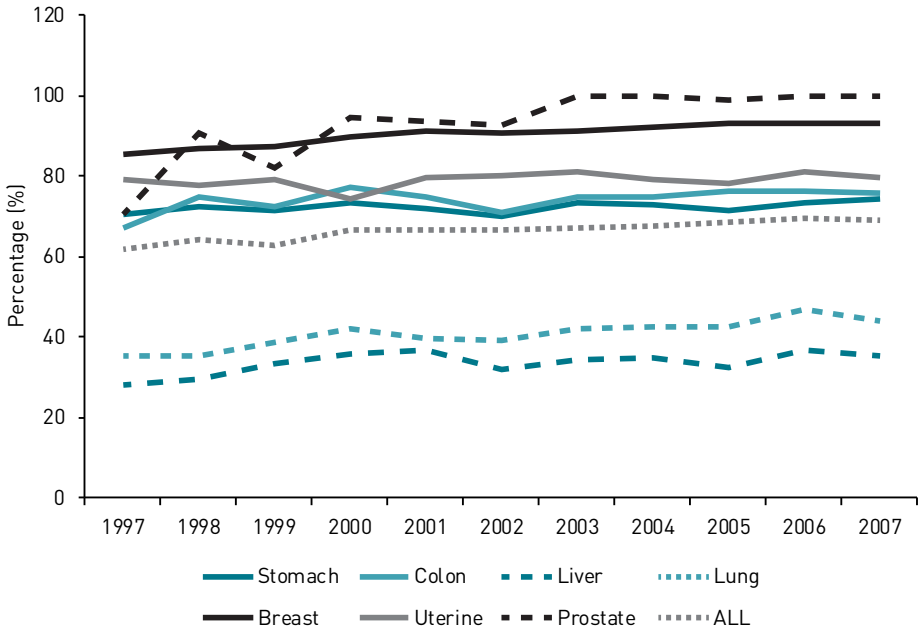


Source: Estimated by the authors based on (Ministry of Health, Labour and Welfare, 2016d).

Cancer screening programmes (stomach, colon/rectum, cervical and breast) are provided by municipalities and some worksites on a voluntary basis with varying co-payment rates. Overall, the screening rate is lower than that of OECD countries. National anti-cancer measures from 2012 stipulate a 50% screening coverage benchmark in five years (from 2012 to 2015). Notably, there is a substantial gender discrepancy in cancer screening, which may also be related to accessibility determined by time, cost and regional resource accessibility of the screening programme, and males are more likely to have cancer screening over the survey period (see also Fig. 5.1 in Chapter 5)

The National Cancer Center recently published data on five-year cancer relative survival rates for breast, cervical and colorectal cancers (Fig. 7.12). These showed substantial improvement in survival for several cancerous conditions. Whether the improvement was due to primary prevention, early screening programmes, technical innovations in treatment, or over-diagnosis remains to be empirically studied.

Fig. 7.12 Five-year relative survival rates for various types of cancer



Note: All figures are percentages.

Source: Matsuda T et al., 2010; National Cancer Center Japan, 2017

Primary care services

There is limited empirical evidence regarding the performance of primary care services in Japan. As the specialty of “general practitioner” is relatively new in Japan, primary care services are provided mainly by clinic physicians who may have little background in general/family medicine; instead, they tend to be certified as a specialist in some subspecialty (e.g. a certified orthopaedic surgeon also provides care in general surgery and internal medicine).

Hashimoto et al. (2011) showed that compared to the USA, where the primary care system is well established, effective coverage for the control of hypertension and hyperlipidaemia is poorer in Japan (Hashimoto H et al., 2011). Using administrative data with clinical process indicators, Tanaka et al. (2016) reported that clinical practices for diabetes control, especially screening for microvascular complications, is suboptimal (Tanaka H et al., 2016). The relatively poor quality in care of chronic diseases could be attributed to the absence of standard guidelines, limited training in general practice as a specialty, and the division

between preventative and curative services in Japan (Hashimoto H et al., 2011).

Acute care services

Since the introduction of DPC (diagnosis-procedure combination) in acute care hospitals in 2003 (see more details in Chapter 5), the performance of participating acute care in hospital services has dramatically improved in Japan. Table 7.1 displays post-operative hospital mortality in Japan and the USA: mortality rates for major surgery are similar between the USA and Japan in some areas; however, the rates for liver and gastric surgery are better in Japan, mainly due to a lower complication rate, partly because of better patient risk profiles (e.g. less obesity).

Table 7.1 Surgical mortality in Japan and the United States of America

	Japan (diagnosis-procedure combination, 2006–2008)					USA (nationwide inpatient sample, 2008)				
	N	Age>75 years (%)	Comorbidity index (%)	In-hospital death	Crude mor- tality (%)	N	Age>75 years (%)	Comorbidity index (%)	In-hospital death	Crude mor- tality (%)
All major surgeries	1 794 268	19.6	9.2	23,049	1.28	11 902 905	16.1	13.9	146 350	1.23
Coronary artery bypass graft surgery (CABG)	13 382	28.5	21.3	404	3.02	222 250	21.5	26.6	4935	2.22
Valvular surgery	11 669	26.3	7.2	437	3.74	107 939	33.2	23.1	5757	5.33
Breast cancer surgery	51 755	13.8	14.8	22	0.04	37 353	20.2	50.0	33	0.09
Lung cancer surgery	28 096	27.0	45.0	271	0.96	38 399	25.4	72.6	959	2.50
Oesophagectomy	5398	15.1	33.9	236	4.37	2024	17.0	56.7	157	7.76
Gastrectomy	49 787	31.1	33.0	781	1.57	8869	33.3	70.3	453	5.11
Hepatectomy	16 502	22.6	74.4	437	2.65	3676	16.1	76.8	191	5.20
Pancreatic cancer surgery	10 143	24.1	39.6	301	2.97	8007	22.6	69.7	352	4.40
Colorectal cancer surgery	70 678	33.8	35.1	1458	2.06	341 666	26.4	30.9	14 861	4.45
Nephrectomy	13 571	25.8	10.3	107	0.79	72 371	14.5	37.2	814	1.12
Hysterectomy for uterine cancer	12 072	7.4	17.3	29	0.24	40 474	15.0	43.3	178	0.44
Total hip or knee arthroplasty	52 938	38.0	1.8	69	0.13	901 022	25.4	4.3	1124	0.12

Source: Estimated by the authors.

OECD Health Statistics 2015 have provided cross-country comparison data on mortality within 30 days of admission in several services, including acute myocardial infarction, haemorrhagic stroke and ischaemic stroke (OECD, 2015). According to the report, Japanese hospitals had poorer performance in acute myocardial infarction, with a death rate about 12%, compared to the OECD average of 8.0%. These data are reported by the National Patient Survey 2011, conducted every three years by the MHLW with a weighted sample of hospitals, including chronic care hospitals. The Survey provides information on cases discharged in a designated one-month period, which may be biased as this ignores seasonal trend of diseases. According to the DPC database that covers around 90% of acute care hospitals annually, the in-hospital mortality was 7.2%, suggesting that comparisons of acute care performance across countries needs further improvement of data base quality when it comes to the comparability of data quality and sources.

7.5 Health system efficiency

7.5.1 Allocative efficiency

Policies regarding health-care resource allocation have been decided between providers (mainly the Japanese Medical Association-JMA), payers (public insurers) and the government (Ministry of Finance and MHLW) until very recently (see details in Chapter 3). A new scheme was proposed after the enactment of the Act for Securing Comprehensive Medical and Long-term Care in the Community in 2014, which stipulate the national database (NDB) on claim bills and other utilization information should fully analysed to estimate optimal allocation of hospital beds and other resources in local settings.

As explained in Section 3.3.3, health-care institutes submit monthly claims for reimbursement to the Claims Review and Reimbursement Organizations (CRROs). All claims submitted are reviewed by CRROs and then reimbursed to health-care institutes based on “fee schedule.” During this process, all the claim data is stored into NDB. NDB covers all health-care insurance claims under the universal health insurance including diagnoses, age, sex, procedures and drugs provided, volume and tariff. Annually more than 1700 million records are registered into NDB annually (Matsuda S et al., 2014). Each municipal government collects detailed information on hospitalized patients through NDB (data are automatically collected through NDB and health-care facilities do not need to report to municipal government), and based on the data collected

and analyzed, municipal government estimates the number of patients and treatment needed in 2025 (Nichi-Iko Medical Practice Institute Co Ltd, 2014). The data estimations of local resource demand will be tabled for discussion at the local party level. However, how this new scheme improves allocative efficiency should await empirical evaluation in the near future.

7.5.2 Technical efficiency

Since the introduction of the DPC with performance reporting in 2003, the average length of inpatient stay and the difference in the length of stay among participating hospitals have dramatically decreased in the past decade: from 21.2 days in 2002 to 16.7 days in 2007 (Ministry of Health, Labour and Welfare, 2008a). Such a decrease suggests that the standardized case-mix evaluation was successful in standardizing the process of care across hospitals. Noguchi et al. (2010) empirically showed that the introduction of this new scheme improved technical efficiency in several surgical conditions (Noguchi H et al., 2010).

However, there remains much room for improvement when it comes to the technical efficiency of Japanese health care. The government has currently started to enhance efficiency by introducing cost-effectiveness analysis in drug price adjustment under universal health insurance system, encouraging the use of generic medications (see more details in Chapter 5), and setting penalty co-payments for patients who use higher-function services without referral. The impact of these policies is still limited and awaits further evaluation.

Another issue regarding a productive improvement in physicians' performance by introducing a new board certification system and eligible assistant staff (e.g. nurse practitioners and physician assistants) has also been discussed. However, political inertia has slowed progress on this issue room the summer of 2017 (see more details in Section 4.2.4).

7.6 Transparency and accountability

Since the introduction of the DPC system with standardized submission of discharge data, the transparency and accountability of participating acute-care hospitals are improving. The system's introduction further facilitates the publication of a voluntary performance index in some hospital groups, e.g. National Hospital Organization (the management body of national hospitals) and the Quality Improvement Project organized

by the Department of Health Economics and Quality Management at Kyoto University (<http://med-econ.umin.ac.jp/QIP/>), among others.

Leadership has been undertaken by the National Clinical Database (NCD) affiliated with specialty surgery boards to register all surgical cases for quality monitoring and improvement purposes (<http://www.ncd.or.jp/>). As of March 2014, there are more than 1 500 000 operation cases registered annually from 4105 health-care facilities, which covers more than 95% of all the operations done in Japan.

The government intends to further extend the performance reporting system in the latest amendment of the Hospital Service Act, which requires every hospital to report their functions (i.e., number of beds in each four categories: high-tech acute, acute, rehabilitative and chronic) to the prefectural authority for a public decision on local resource allocation under the Regional Healthcare Vision scheme. However, there is no clear blue print on how the discussion should proceed: whether the discussion table should be opened to local community citizens remains unclear. To facilitate data-driven, open discussion, the Cabinet Office recently disseminated an estimation of local health-care needs and future projections (Cabinet Office, Government of Japan, 2015b), again, what the policy reform brings about is open to empirical evaluation.

Compared to DPC database which covers acute-care in-hospital services (see details in Section 5.4.2), performance evaluation is still limited in outpatient services and chronic-care inpatient services. These data (outpatient services and chronic-care inpatient services) are covered mainly by NDBs. As the primary purpose of NDB is for reimbursement and not for research/analysis, NDB does not contain detailed procedure or outcome data. Lack of empirical evidence on cost-effectiveness analysis has prevented a transparent discussion on resource allocation and pricing in public domain.

For data-driven, evidence-based policy-making, the government has slowly but steadily changed their policy to make government data available openly, including administrative records for analysis for the purpose of policy planning and evaluation. However, the organizational infrastructure needed to improve the quality of data and to support wider use is still missing.

8 Conclusions

For the past decades, Japan has ranked high in a range of population health metrics including the world's longest life expectancy. Thanks to its overall effectiveness of the health system and paralleled advances in technology, Japan has for many years enjoyed increased life expectancy along with decreased maternal and infant mortality and burden of communicable diseases. While this was achieved through various socioeconomic factors, the health care system guided by the principles of a universal health insurance system undoubtedly played a major role. Since its founding in 1961, the universal health insurance system in Japan has provided comprehensive coverage to all Japanese citizens.

Japan's health system is characterized by universal insurance scheme through social insurance premiums and tax subsidy, where participants are free to choose health care facilities and good quality of care with comparably low price. However, as a greater proportion of the population can expect to live a long life, in recent decades the incidence of NCDs such as obesity and diabetes have increased significantly. This rise, along with population ageing, continues to place strain on the national health system. Coupled with over two decades of economic slowdown, Japan must now find policies that balance universal coverage, support for the elderly, and financial sustainability.

The Ministry of Health, Labour and Welfare is the central leading institution in Japan's health system. The structure of the MHLW is complex, as well as the manner in which it interacts with other ministries, insurance associations, the private sectors including health care industries, care providers and patient and professional organizations such as the Japan Medical Association and Japanese Nursing Association. In Japan, there were 8442 hospitals, 101 529 clinics and 68 940 dental clinics in 2016 and 81.1% are predominantly privately owned. Although one of the unique attributes of Japanese health care system is that most of the services are provided through private organizations, the government regulates and controls nearly all aspects of the health system,

particularly a uniform fee schedule, at three levels national, prefectural, and municipal.

One of the characteristics of Japanese health care system is its free access to health care facilities. Compared to other OECD countries, inpatient care in Japan is characterized by longer average hospital stays with a greater number of inpatient beds per capita with comparably low number of physicians. The number of physicians and nurses per 1000 were 2.35 in doctors and 9.06 in nurses. Although its number of nurses is higher than the 8.3 average in OECD, the number of physicians is below that of OECD average of 3.02. This is likely to be caused by the ease of access to the health care system at any point. This style of system has financial consequences that need to be accounted for. Japan's policy of tight control of health-care cost and a laissez-faire approach to service delivery, with inadequate governance of provider organisations, created a mismatch between need and supply of health-care resources and impeded accountability for care quality.

Japan's Health System faces some significant challenges whilst ensuring financial sustainability of the system during a demographic transition. Although Japan was characterized as high health outcome with relatively low health expenditure, the total expenditure on health accounted for 10.9% of GDP in Japan in 2015, which was about two percentage points above the OECD average of 9% (Although this was partly due to the changes of rules which Japan newly included expenditure on long-term care into health care expenditure). Population ageing and increasing price of new technologies lead to constant increase in expenditure, while decades-long economic stagnation decreased premium and tax revenue for universal health insurance scheme, resulting in an ever-increasing rate of health expenditure per GDP. However, direct OOP payments contributed only 11.7% of total health financing in 2014. The health insurance coverage rate was in principle 100% in Japan, and the share of household consumption spent on OOP payments was only 2.2%, which is less than the OECD average (2.8%).

The health insurance premiums were based on income, place of residence and ability to pay. There are two major types of insurance schemes in Japan; Employee's Health Insurance and National Health Insurance (NHI). Employee's Health Insurance covers those who are public servants or work at companies, while NHI covers the self-employed and unemployed. The Employee's health insurance covered

the major proportion of population (58.7%) followed by National Health Insurance (28.3%), and late-stage medical care system for the elderly (12.4%). There has been a rapid increase in the proportion of the population covered by NHI in past decades due to an increase in the unemployed (mainly attributed to the elderly after retirement). This caused a significant financial burden on the NHI. In order to solve financial inequity between Employee's Health Insurance and NHI, the government introduced the late-stage medical care system for the elderly (75 years old and over) in 2008.

Japan is facing super ageing problem; the number of elderly population is expected to grow from the current 16 million to 20 million by 2020, and the working population will be expected to decline from 109 million to 100 million during the same period. People aged 65 or older reached 27.3% of population in 2016, are expected to reach 39.4% by 2055 while the over 75 year old population will peak by 2025. This demographic change will require drastic reform of healthcare and long-term care systems. Unless tackled, the rapid increase in aging population can impose a large burden on the health care system including universal health insurance system. More than 50% of medical care expenditure was spend on elderly population (aged 65 years or over), while that of younger population (aged 0–14 years) was only 8%.

In order to meet the challenges posed by an ageing population, several reforms have been adopted. The Japanese government introduced long-term care insurance system in 2000 as well as Integrated Community Care System (ICCS) in 2006, which remains the central tenet of Japanese long-term care strategy. The *Comprehensive Reform of Social Security and Tax* was passed by the Cabinet decision in December 2010, which was the joint reform for the social security system and taxation system that enabled broader popular support for the social security system in Japan. Priority areas for this reform were decided by the cabinet office as follow:

- measures for the support of children and child raising and employment of young people,
- reform of medical and long-term care services,
- pension reform,
- measures against poverty and income inequality, and
- measures for low-income earners as cross-system issue.

Seven years have already passed since the adoption of this reform plan. It was planned that increase in marginal revenue of taxation were

specifically earmarked for social security expenditures. The consumption tax rate was raised from 5% to 8% in April 2014 and was originally supposed to reach 10% in October 2015 to make financial space for reform, but the timeline was extended to October 2019 due to political tensions between LDP and the opposition party. Comprehensive Reform of Social Security and Tax is still the central policy for healthcare and long-term care in Japan and several related laws have successfully been enacted or amended under this reform plan.

In this report, a comprehensive analysis of health care system under recent reforms in terms of financial protection and equity in financing, user experience and equity of access to health care, health outcomes, health service outcomes and quality of care, health system efficiency, transparency and accountability has been performed. Although overall health system performance has been improving, we concluded that there are still many challenges remain: sustainability of health care financing, increasing inequity within population and multiple challenges mainly due to aging society.

Japan needs a paradigm shift to the new system as proposed in *Japan Vision: Health Care 2035*, a report for the Health Minister by young Japanese health leaders in June 2015 under the former Health Minister, Yasuhisa Shiozaki's leadership. The goal of *Japan Vision: Health Care 2035* is to build a sustainable health care system that delivers better health outcomes through care that is responsive and equitable to each member of the society and that contributes to prosperity in Japan and the world. To attain this goal, the panel proposed three main pillars of reform: lean healthcare (implement value-based healthcare), life design (empower society and support personal choice) and global health leader (lead and contribute to global health). Bearing in mind these transformations by 2035, reforms to the financing system and greater efficiencies, with focus on outcomes, quality and efficiency, care and integrated approaches across sectors, will be necessary to maintain a low-cost, equitable health system in the future.

9 Appendices

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9.2 Useful web sites

- Cabinet Office, Government of Japan <http://www.cao.go.jp/index-e.html>
- Ministry of Economy, Trade and Industry <http://www.meti.go.jp/english/>
- Ministry of Education, Culture, Sports, Science and Technology <http://www.mext.go.jp/en/>
- Ministry of Finance <http://www.mof.go.jp/english/>
- Ministry of Foreign Affairs <http://www.mofa.go.jp/>
- Ministry of Health, Labour and Welfare <http://www.mhlw.go.jp/english/>
- Japan vision: Health care 2035 <http://www.mhlw.go.jp/seisakunitsuite/bunya/hokabunya/shakaihoshou/hokeniryou2035/future/en/>
- Ministry of Internal Affairs and Communications <http://www.soumu.go.jp/english/index.html>
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- Ministry of the Environment <http://www.env.go.jp/en/index.html>
- Fire and Disaster Management Agency, Ministry of International Affairs and Communications <http://www.fdma.go.jp/en/>
- Japan Agency for Medical Research and Development (AMED) <https://www.amed.go.jp/en/index.html>
- National Cancer Center Japan <https://www.ncc.go.jp/en/>
- Bureau of International Health Cooperation, National Center for Global Health and Medicine <http://kyokuhp.ncgm.go.jp/eng/index.html>
- National Institute of Infectious Diseases <https://www.niid.go.jp/niid/ja/>
- Institute for Global Health Policy Research (iGHP) <http://www.ighp.ncgm.go.jp/en/>
- Japan International Cooperation Agency (JICA) <https://www.jica.go.jp/english/>
- Japan Medical Association (JMA) <https://www.med.or.jp/english/>
- Japanese Nursing Association (JNA) <https://www.nurse.or.jp/jna/english/>
- Pharmaceutical and Medical Devices Agency (PMDA) <https://www.pmda.go.jp/english/index.html>
- OECD Japan <http://www.oecd.org/japan/>
- World Bank Japan <http://www.worldbank.org/en/country/japan>
- World Health Organization, Japan <http://www.who.int/countries/jpn/en/>

9.3 HiT methodology and production process

HiTs are produced by country experts in collaboration with an external editor and the Secretariat of the Asia Pacific Observatory based in the WHO Regional Office for South-East Asia in New Delhi, India.

HiTs are based on a template developed by the European Observatory on Health Systems and Policies that, revised periodically, provides detailed guidelines and specific questions, definitions, suggestions for data sources and examples needed to compile reviews. While the template offers a comprehensive set of questions, it is intended to be used in a flexible way to allow authors and editors to adapt it to their particular national context. The template has been adapted for use in the Asia Pacific region and is available online at: http://apps.who.int/iris/bitstream/10665/208276/1/9789290617570_eng.pdf?ua=1

Authors draw on multiple data sources for the compilation of HiTs, ranging from national statistics, national and regional policy documents to published literature. Data are drawn from information collected by national statistical bureaux and health ministries. Furthermore, international data sources may be incorporated, such as the World Development Indicators of the World Bank. In addition to the information and data provided by the country experts, WHO supplies quantitative data in the form of a set of standard comparative figures for each country, drawing on the Global Health Observatory (GHO) data and Global Health Expenditure Database. HiT authors are encouraged to discuss the data in the text in detail, including the standard figures prepared by the Observatory staff, especially if there are concerns about discrepancies between the data available from different sources.

The quality of HiTs is of real importance since they inform policy-making and meta-analysis. HiTs are subject to wide consultation throughout the writing and editing process, which involves multiple iterations. They are then subject to the following.

- A rigorous review process consisting of three stages. Initially, the text of the HiT is checked, reviewed and approved by the Asia Pacific Observatory Secretariat. It is then sent for review to at least three independent experts, and their comments and amendments are incorporated into the text, and modifications are made accordingly. The text is then submitted to the relevant ministry of health, or appropriate authority, and policy-makers within those bodies to check for factual errors.

- There are further efforts to ensure quality while the report is finalized that focus on copy-editing and proofreading.

HiTs are widely disseminated (hard copies, electronic publication, translations and launches). The editor supports the authors throughout the production process and, in close consultation with the authors, ensures that all stages of the process are taken forward as effectively as possible.

9.4 About the authors

Haruka Sakamoto, MD, MPH is a primary care physician and a researcher at University of Tokyo, Department of Global Health Policy. She got her M.D from Sapporo Medical University in 2008 and worked as physician in Tokyo for several years. She then got the scholarship from the World Bank and got her MPH at the Harvard T.H Chan School of Public Health. From 2011–2013 and 2016, she had worked at the department of the international cooperation, Ministry of Health, Labour and Welfare of Japan where she was deeply involved in health policy activities in Japan. As part of the work, she participated in WHO meetings, G7 meetings as well as bilateral cooperation activities through JICA (Japan International Cooperation Agency). Her current research focuses on politics in global health, especially in public health emergencies, universal health coverage and ageing society.

Md. Mizanur Rahman, MSc, PhD received his Bachelor and Master's degree in Demography in 2004 and 2005, respectively from Rajshahi University, Bangladesh. He received a PhD in Health Financing in 2013 from the University of Tokyo, Japan. Mr. Rahman is currently working as Project Assistant Professor in the University of Tokyo. Before joining the University of Tokyo, Mr. Rahman worked as Associate Professor in the Department of Population Science, University of Rajshahi, Bangladesh. He has experience researching universal health coverage progress assessment, health financing and policy evaluation, NCD risk factor identification, maternal and child health, and systematic review and meta-analysis in public health.

Shuhei Nomura, MSc is currently Assistant Professor of the Department of Global Health Policy at The University of Tokyo. He has published widely on disease burden, risk factors, human security, social determinants of health, and resilience/sustainability of health systems post-disasters. He holds a MSc from the same department and is a PhD candidate in the Department of Epidemiology and Biostatistics, Imperial College London, UK.

Etsuji Okamoto, MD, PhD is currently Professor of the Department of Health and Welfare Management, University of Fukuchiyama. He graduated from Kinki University Medical School in 1983 and Osaka University Law School in 1985. Completed internship at US Naval Hospital in Yokosuka in 1986. After serving as an assistant professor of public health at Kinki University and a research managing director of international health at the National Institute of Public Health, he assumed the current position in 2016. The field of academic interest is: health economics and policy, universal health coverage and data analysis of health insurance claims data.

Soichi Koike, MD, PhD has been a professor in the Center for Community Medicine, Jichi Medical University since 2014. Prior to joining JMU, he was a faculty member at University of Tokyo (2007–2014), a Senior Advisor at UNAIDS (2003–2006), and a medical officer at MHLW (1993–2007). His research interests lie in the area of health care system and policy, much of his recent work has been on resource distribution and human resource development. He received an MD and a PhD from Keio University, an MPH from Harvard University and an MBA from London University.

Hideo Yasunaga, MD, PhD is the Professor of the Department of Clinical Epidemiology and Health Economics, School of Public Health, The University of Tokyo. He has engaged in studies on clinical epidemiology, health economics and health services research, using large healthcare databases in Japan.

Norito Kawakami, MD, PhD is currently Professor of Mental Health, School of Public Health, The University of Tokyo, Japan, and the President of the Japan Society for Occupational Health. He has been working as a researcher for the past 35 years in areas of public mental health and occupational health, particularly focusing on mental health of workers, publishing more than 350 publications.

Hideki Hashimoto, MD, PhD is currently Professor in Health and Social Behavior in the School of Public Health, the University of Tokyo. He has published many academic articles on performance evaluation of Japan's health policy, including an article on cost containment and quality of Japanese medical care system in Japan Series in the Lancet 2011. His current research interests rest on health equity and social determinants of health in Japan and other countries.

Naoki Kondo, MD, PhD has been an Associate Professor at the Department of Health Education and Health Sociology, the School of Public Health, the University of Tokyo. His primary research topics are social determinants of health and the management of health inequality in national and community settings. He is the vice chief investigator of the Japan Gerontological Evaluation Study.

Sarah Krull Abe, MScPH, PhD is an Assistant Professor in the Department of Global Health Policy (GHP) at The University of Tokyo where she received her PhD. Her core research areas are: cancer epidemiology, maternal and child health, nutrition and non-communicable diseases. She also holds an MScPH from the Charité - Universitätsmedizin Berlin where she worked as a Project Manager for the World Health Summit.

Matthew Palmer, MIPH is a PhD Candidate at the Department of Global Health Policy at the University of Tokyo. He holds a Master of International Public Health from the University of Queensland, Australia. Throughout his career he has held positions roles in health systems throughout the Pacific. His areas of expertise and interest health system strengthening and reproductive health policy in low resource settings.

Cyrus Ghaznabi is currently a Luce Scholar working at the University of Tokyo's Department of Global Health Policy as a visiting researcher. He holds a Bachelor of Arts in Biological Sciences and Policy Studies from Rice University, Houston, TX.

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ISBN-13

978 92 9022 626 0



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