Resilient and people-centred health systems: Progress, challenges and future directions in Asia

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Chapter 5. Cambodia

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5.1 Introduction[1]

Cambodia is experiencing a demographic and epidemiological transition, with reducing birth rates and ageing of the population, and an increasing proportion of ill-health arising from NCDs. Strong economic growth has led to a reduction in the proportion of the population living in poverty, and a transition from low-income- to lower-middle-income country status. Health status has improved markedly in recent years, with significant reductions in maternal and child mortality rates (Annear et al., 2015).

An ongoing process of national health reform began in the 1990s with expansion of the physical infrastructure (district hospitals and health centres), and is continuing through innovations in health financing and access to services. Development partners have been important contributors to the reforms and have helped shape policy-making. A series of major strategic policy documents have culminated in the recent Health Strategic Plan 2016–2020 and the National Social Protection Policy Framework 2016–2025 (MoH, 2016; RGC, 2017). Reforms are now focused on moving towards UHC; as in other countries, providing coverage for the informal sector is a challenge.

Current health system challenges include: overall health outcomes that are poor in comparison with global and regional averages; the persistence of urban–rural and rich–poor disparities in health status; weaknesses in the quality of service delivery as well as in access to health services; the still high proportion of THE that is sourced from OOP expenditure; the need to increase the health workforce and the capacity of health facilities to address the growing burden of chronic illnesses and NCDs; and inadequate regulation of the private sector.

5.1.1 Economic and political context

During the past two decades, Cambodia has had a stable government and strong economic growth with a considerable reduction in national poverty levels. Annual growth in GDP averaged 7.7% (at constant price 2000) over

[1] We acknowledge the work of the authors of The Kingdom of Cambodia health system review (Asia Pacific Observatory on Health Systems and Policies): Peter Leslie Annear, John Grundy, Por Ir, Bart Jacobs, Chean Men, Matthias Nachtnebel, Sophal Oum, Ann Robins and Chhun Eang Ros.

the period of 1996–2015 and is expected to remain at 7% during 2014–2019 (RGC, 2014). As a result, the official national poverty rate declined from 47.8% of the total population in 2007 to approximately 13% in 2015, and continues to fall (Table 5.1), partly due to increased urbanization together with improvements in agriculture and rural infrastructure.

However, the gains have not been equitably distributed. While incomes in urban areas have grown rapidly, life in rural areas remains largely based on subsistence rice production. Consequently, the Gini index increased from 38.3 in 1994 to 41.9 in 2005 (World Bank, 2018); with economic growth and a general decline in official (largely rural) poverty levels, the index fell to 30.8 in 2015 (United Nations Development Programme, 2016).

There have also been significant improvements in the social determinants of health, in education (school enrolment), rural development (improved sources of water and access to toilet facilities), and access to roads and public transport services. The female literacy rate in 2014 was 81% and male literacy rate 90%, and 65% of households had access to improved drinking water (95% urban, 60% rural). Measured according to the Human Development Index, Cambodia has had the fastest improvement in living conditions among all Asian countries in the past four decades: rising from 0.306 in 1980 to 0.563 in 2015 (United Nations Development Programme, 2016).

Table 5.1 Cambodia: Socioeconomic indicators, 1980–2017

Indicators	1980	1990	2000	2010	2015	2017
Population, total (in millions)	6.7	9	12.2	14.3	15.5	16
Population density (people per sq.km of land area)	37.9	50.8	68.8	81.1	87.9	90.7
Fertility rate, total (births per woman)	5.9	5.6	3.8	2.9	2.6	..
Birth rate, crude (per 1000 people)	45.9	42.4	28.1	25.5	23.7	..
Death rate, crude (per 1000 people)	43.9	12.7	9.4	6.5	6.1	..
Population growth (annual %)	-1.1	3.2	2.2	1.5	1.6	1.5
Population ages 65 and above (% of total)	2.7	2.9	3.1	3.7	4.1	4.4
Population urban (%)			17.5	19.8		21.0 (2016)

Table 5.1 Cambodia: Socioeconomic indicators 1980–2017 (contd)

Indicators	1980	1990	2000	2010	2015	2017
Age dependency ratio, old (% of working-age population)	4.8	5.5	5.6	5.9	6.4	6.9
Age dependency ratio, young (% of working-age population)	73	83.8	75.2	52.9	49.2	48.6
GDP (current US$, billions)	..	..	3.7	11.2	18	22.2
GDP per capita (current US$)	..	..	302.6	785.7	1163.2	1384.4
GDP growth (annual %)	..	..	10.7	6.0	7.0	6.8
Gross national expenditure (% of GDP)	..	..	111.8	105.4	104.4	103.4
Tax revenue (% of GDP)	..	..	..	10.0	14.2	..
Industry, value added (% of GDP)	..	..	21.7	21.9	27.7	30.9
Agriculture, forestry and fishing, value added (% of GDP)	..	..	35.7	33.9	26.6	23.4
Services, value added (% of GDP)	..	..	36.9	38.3	39.8	39.7
Labour force, total (in millions)	..	4.0	5.6	8.1	9.0	9.3
Unemployment, total (% of total labour force) (modelled ILO estimate)	..	..	2.5	0.3	0.2	0.2
Poverty headcount ratio at national poverty line (% of population)	..	..	53.2 (2005)	22.1	17.7	..
Income inequality (Gini coefficient)			41.9 (2005)	36.0	30.8[a]	..
Personal remittances, received (% of GDP)	..	..	2.8	1.4	2.2	1.7
Current health expenditure (% of GDP)	..	..	6.4	6.9	6.0	..

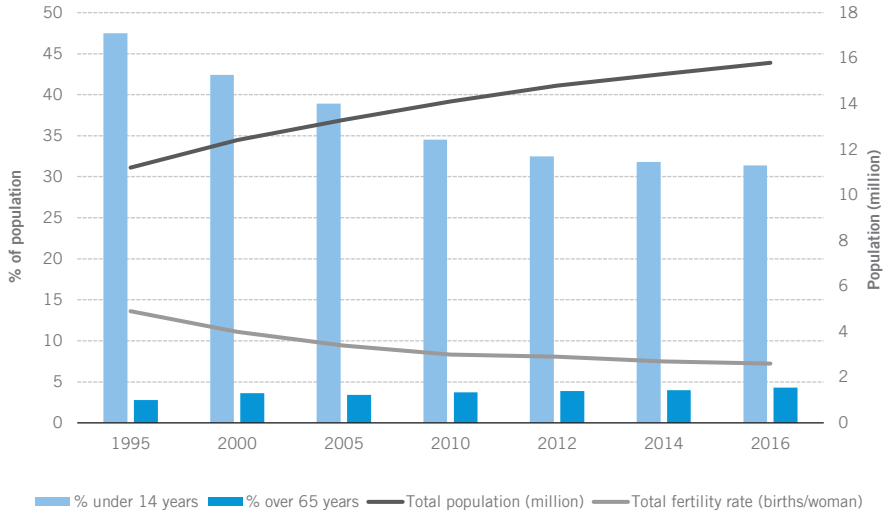
Key: GDP: gross domestic product; ILO: International Labour Organization
Sources: World Bank, 2018; [a] United Nations Development Programme, 2016

5.2 Health status and risk factors

The Cambodian population is gradually ageing and slowly urbanizing. Population growth has slowed over time to 1.6% per annum in 2016 (Table 5.1; Fig. 5.1), with the population of the main city, Phnom Penh, growing at approximately 2.8% per annum. The total population was 15.8 million in 2016 and is estimated to reach 16.5 million by 2020. Health-care demand is rising as the population structure changes: 9.8% of the total population are

children under 5 years, 6.5% are aged over 60 years, and 27% are women of reproductive age (15–49 years). Health-care demands for these groups are much higher than for other population groups, and it is anticipated that a significant increase in the proportion of young adults in the population will increase the demand for adolescent and youth reproductive health services.

Fig. 5.1 Cambodia: Population indicators, 1995–2016



Source: World Bank, 2018

5.2.1 Health status

Population health indicators

There have been significant improvements in population health indicators during the period 1995 to 2015 in Cambodia (Table 5.2). Life expectancy at birth increased from 58 years in 1995 to 69 years in 2016; the maternal mortality ratio fell from 340/100 000 live births in 2005 to 161/100 000 in 2016; and under-5 mortality fell from 121/1000 live births in 1995 to 31/1000 live births in 2016. Improvements have been registered also in child underweight and wasting in the past 20 years.

Table 5.2 Cambodia: Health indicators, 1995–2016

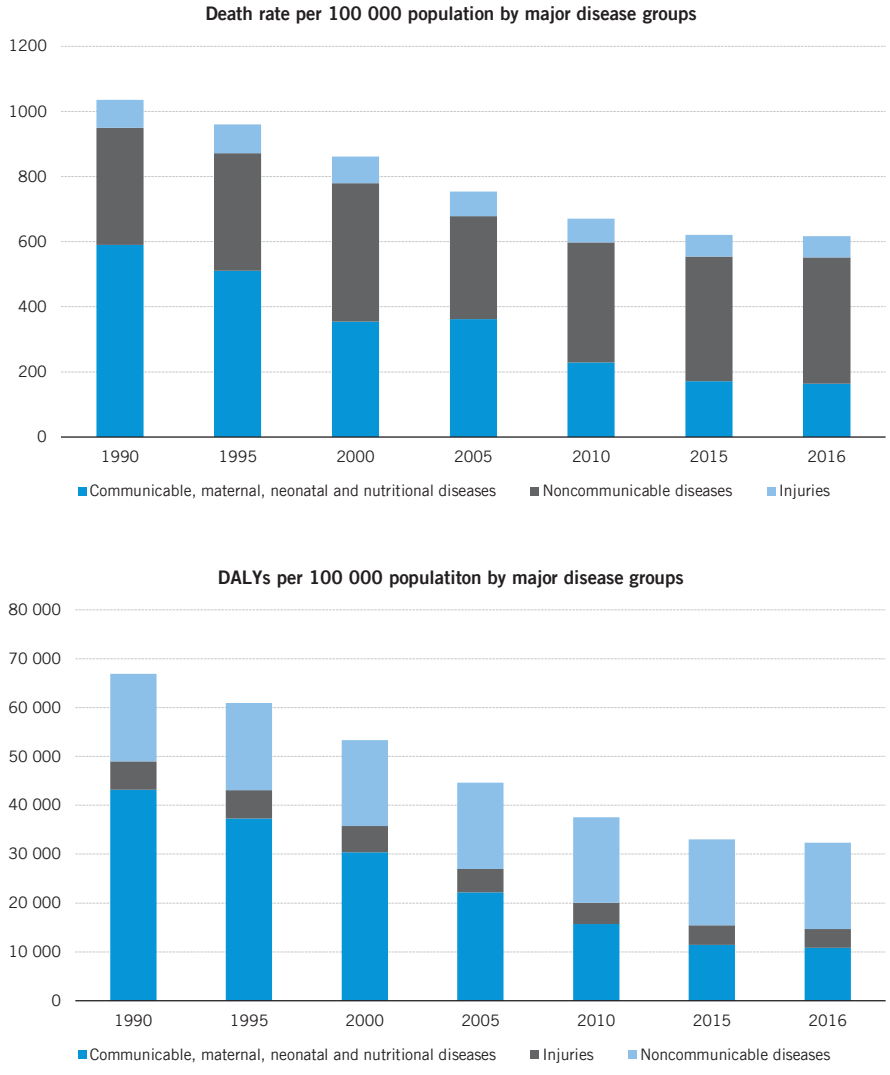
Indicator	1995	2000	2005	2010	2014	2016
Life expectancy at birth (years)	57.8	61.9	67.0	70.6	68.2	69.4
Infant mortality rate (per 1000 live births)	87.6	81.6	51.9	37.3	28.9	26.3
Under-5 mortality rate (per 1000 live births)	121.4	110.5	63.4	43.8	33.7	30.6
Maternal mortality ratio (per 100 000 live births)	750	510	340	250	167	161
Child underweight (%)	42.6	39.5	28.4	29.0	24.2	..
Child wasting (%)	13.4	16.9	8.3	10.8	2.4	..

Source: World Bank, 2018

Burden of disease

Cambodia is also witnessing an epidemiological transition towards a greater prevalence of NCDs – such as cardiovascular disease, cancers, chronic respiratory disease and diabetes – which together are the largest causes of mortality: rising from 30% of deaths in 1991 to 58% of deaths in 2016 (Table 5.3; Fig. 5.2). However, in terms of disability-adjusted life years (DALYs), infectious diseases (respiratory diseases, diarrhoea and others) remain the number one cause, followed by cardiovascular diseases and neonatal conditions. Communicable, maternal and nutritional conditions (maternal and neonatal disorders, HIV/AIDS, malaria, nutritional deficiencies) have moved down the list of causes of disease since 1990, while NCDs and chronic diseases have moved up (cirrhosis, diabetes, chronic respiratory infection, neurological disorders).

Fig. 5.2 Cambodia: Deaths and DALYs per 100 000 population by major disease groups, 1990–2016



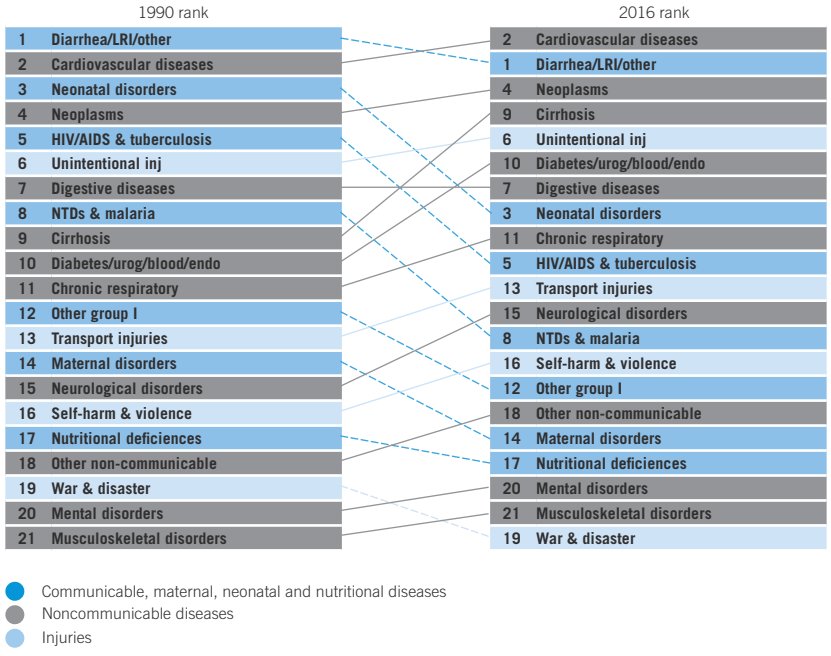
Source: Institute for Health Metrics and Evaluation, 2018

Table 5.3 Cambodia: Leading causes of death and loss of DALYs (% of total), 1990 and 2016

Deaths - 1990		Deaths - 2016		DALYs - 2016	
Condition	%	Condition	%	Condition	%
Infections	36.0	Cardiovascular	24.5	Infections	14.0
Cardiovascular	14.7	Infections	13.3	Cardiovascular	11.5
Neonatal	6.8	Cancer	12.3	Neonatal	8.7
Cancer	5.9	Cirrhosis	7.3	Other NCD	7.3
HIV/AIDS & TB	5.8	Injury	5.3	Cancer	6.8
Injury	4.9	Diabetes	5.2	Injury	5.9
Digestive	3.8	Digestive	4.9	Mental disorder	5.3
Malaria	3.5	Neonatal	4.9	Musculoskeletal	4.8
Cirrhosis	3.4	Chronic respiratory	4.1	Diabetes	4.7
Diabetes	2.6	HIV/AIDS	3.8	Cirrhosis	4.7

Source: Institute for Health Metrics and Evaluation, 2018

Fig. 5.3 Cambodia: Causes of death (all ages, both sexes), 1990 and 2016



Source: Institute for Health Metrics and Evaluation, 2018

5.2.2 Risk factors

There has also been a shift in the distribution of risk factors for morbidity and mortality from 1990 to 2016 (Table 5.4). Behavioural risk factors such as diet, tobacco and alcohol consumption – which caused 55% of deaths by 2016 – rose to the top of the list, compared to 1990 (Fig. 5.4). Metabolic risk factors, such as high BMI, high blood pressure, raised blood glucose and cholesterol, also rose up the list and were responsible for a further 25% of deaths by 2016. In 1990, the leading risk factors were, by contrast, child and maternal conditions. However, for premature death and disability, child and maternal conditions (16%) and air pollution (mainly indoor) (10%) remained the dominant risk factors in 2016 compared to 1990.

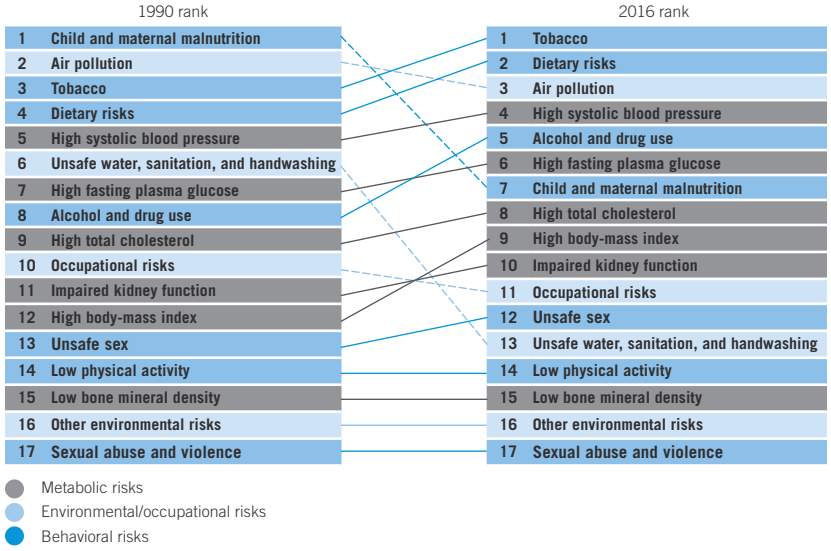
Cambodia therefore faces the dual challenge of an ongoing burden of communicable diseases and a growing epidemic of NCDs. In addition, there is simultaneously overweight and obesity among adults (principally the more well-off) while undernutrition persists among children (mainly in poor families).

Table 5.4 Cambodia: Top ten risk factors responsible for death and DALYs (% of total), 1990 and 2016

Deaths - 1990		Deaths - 2016		DALYs - 2016	
Risk factor	**%**	**Risk factor**	**%**	**Risk factor**	**%**
Child and maternal	23.0	Tobacco	29.9	Child and maternal	15.7
Air pollution	16.9	Diet	15.1	Air pollution	10.2
Tobacco	11.9	Air pollution	15.0	Tobacco	8.8
Diet	9.2	High BP	11.7	Diet	7.8
High BP	7.0	Alcohol	9.8	Alcohol	7.2
Unsafe water	6.1	High blood glucose	8.0	High BP	5.3
High blood glucose	3.9	Child & maternal	8.0	High blood sugar	4.7
Alcohol	3.2	High cholesterol	4.7	Occupational	4.0
High cholesterol	2.8	High body mass	4.3	High body mass	2.8
Occupational	2.8	Impaired kidney	3.5	High cholesterol	2.4

Source: Institute for Health Metrics and Evaluation, 2018

Fig. 5.4 Cambodia: Leading risk factor for death (all ages, both sexes), 1990 and 2016



Source: Institute for Health Metrics and Evaluation, 2018

5.3 The health system

Cambodia has a mixed public–private health system for the delivery of public health services, under the direction of the MoH. Government health services include a network of tertiary and secondary hospitals, primary care health centres (HCs) and health posts (HPs), organized in health operational districts (ODs) that are defined by the MoH according to population coverage (*see* Table 5.5 for a summary of terms).

5.3.1 Organization and governance

The MoH is mandated to lead and manage the entire health sector (public services as well as the private sector). While the public sector is the prominent provider of preventive services and inpatient admissions, the disparate private sector tends to dominate provision of outpatient curative consultations. Private providers outnumber public providers, but are mostly small scale, and regulation of the private sector remains weak.

Public sector health service delivery is organized through the MoH into three tiers: the national level, provincial/municipal level and the health OD.

- The national level (located at Phnom Penh) includes the central MoH administration together with national centres for disease control and the national hospitals.
- The provincial/municipal level (including the capital city of Phnom Penh) is the interface between the central and OD levels within the MoH system; the provincial/municipal boundary follows the national political or administrative boundaries established by the Ministry of Interior.
- The OD is a population-based catchment unique to the government health system and established originally by the 1995 Health Coverage Plan; it is the most peripheral subunit of the health system; each OD reports to the provincial or municipal health department of the location in which it operates; and each has one referral hospital and a designated number of health centres. ODs do not have the same geographical boundaries as the Ministry of Interior administrative districts.

The term "referral hospital" is applied to all provincial, municipal and district (OD) hospitals, all of which provide referral services to lower levels of service delivery within the government system. The term "district hospital" is synonymous with OD hospital. The delivery of government health services within this system follows a defined package of care at each level, the minimum package of activities at primary care health centre level and the complementary package of activities at various levels of hospital service delivery (*see* Table 5.5).

Table 5.5 Cambodia: Health system terminology

Terms	Definition	Number c.2016
Operational district (OD)	A geographical area defined by the MoH for the administration and delivery of government health services. Used exclusively for the delivery of health services. Includes a population catchment of 100 000–200 000 supported by one referral hospital and 10–20 health centres and managed by an MoH OD office.	94 ODs (the number is growing as the population expands over time) that include the national population of all ADs
Administrative district (AD)	Defined under the Ministry of Interior as the national political unit below the level of province. OD boundaries do not align with AD boundaries. The MoH is now considering the idea of dissolving the OD structure in favour of returning to AD boundaries for health administration.	The national population is divided geographically into 197 ADs. ADs have no relationship to the health delivery system.
Referral hospital (RH)	A tertiary- or secondary-level hospital within an OD that serves the OD population. Where a provincial hospital lies within an OD it serves as the OD referral hospital for all health centres in the OD; where there is no provincial or municipal hospital a designated secondary-level district hospital serves as the referral hospital.	A total of 102 nationally (including all national hospitals, provincial/municipal hospitals and district hospitals)
National hospital	The highest level of care in the MoH health delivery system; delivers tertiary-level care as designated by the complementary package of activities (complementary package of activities [CPA]-3).	A total of 9 located in Phnom Penh
Provincial/ municipal hospital	Each of Cambodia's 25 provinces and municipalities has a single provincial/ municipal hospital providing tertiary-level care (CPA-2).	A total of 25 nationally in Phnom Penh and each provincial capital
District hospital	A hospital that serves the population of a single OD; there is generally only one district hospital per OD; delivers a complimentary package of activities (CPA-1).	A total of 68 OD-based district hospitals
Health centre (HC)	The lowest official level and generally the first point of contact of the MoH health delivery system; a subunit of the OD and serves a population of 10 000–20 000 with primary care services.	A total of 1141 nationally in 94 ODs

Table 5.5 Cambodia: Health system terminology (contd)

Terms	Definition	Number c.2016
Health post (HP)	In remote areas with low population density, HPs have been established by the MoH to function as the lowest level of the OD health system and first point of contact.	107 HPs across the 94 ODs
Minimum package of activities (MPA)	A defined package of primary care activities mandated for delivery at every health centre, which includes initial consultation, primary diagnosis, emergency first aid, chronic disease care, maternal and child health care, birth spacing advice, immunization, health education and referral.	
Complementary package of activities (CPA)	A defined package of secondary- and/or tertiary-level activities for delivery at OD referral hospitals (provincial, municipal and district hospitals) at three sublevels:	
	*CPA-1 hospitals have no large-scale surgery, no blood bank or blood deposit, but offer basic obstetric services.	CPA-1: 33 hospitals at this level in 2011
	*CPA-2 hospitals provide CPA-1 level care plus emergency care services and large-scale surgery, ICU, and other specialized services such blood transfusion, ear–nose–throat (ENT) consultation, ophthalmology and orthodontic services.	CPA-2: 31 hospitals at this level in 2011
	*CPA-3 hospitals provide the top level of care, including general anaesthesia and more activities than a CPA-2 hospital.	CPA-3: 26 hospitals at this level in 2011
Provincial/ municipal health department (PHD/MHD)	The PHD (or municipal department) is the administrative structure within the MoH that organizes and manages government health services within each province or designated municipality.	25

Source: By the authors

The private sector

The rapidly expanding private for-profit sector is an important provider of health services, especially non-hospital curative care. Private health expenditure is 60% of total health expenditure, with services provided principally by private providers. Private practice, while it is mainly concentrated in urban and economically advantaged areas, is also becoming

pervasive in rural areas. The MoH reports that there were 10 184 formal private providers/facilities by 2017 (excluding at least 2156 pharmacies and depot pharmacies), ranging from nursing care, pregnancy care, physiotherapy and consultation cabinet to clinic, polyclinic and hospital. Private health care is the dominant source of care for the ambulatory treatment of illnesses, but less dominant for inpatient care, and plays only a limited role in the delivery of preventive health services. In rural areas, only 15% of primary care consultations occur in the public sector, and private non-medical (unqualified) providers account for half of all health-care providers (MoH, 2016).

The private not-for-profit sector – comprising local and international NGOs and charities – also plays an important role. Most of these work at district and community level in collaboration with PHDs and ODs (including RHs and HCs) in the delivery of, or in support of, government health services, including curative care as well as health education and promotion activities. Over 180 NGOs were operating nationally in early 2016.

5.3.2 Patient-centredness

One of the central aims of the public health system in the current period is to initiate a range of activities that are designed to improve the quality of care at government health facilities to a level that is responsive to patient needs and effective in improving health-care outcomes. Currently, the MoH and partners agree that the quality of care provided at government facilities needs to improve before the utilization of government services rises significantly. One consequence of this is the apparently increasing rate of travel to neighbouring countries when hospital care is needed.

While there is no clear definition of patient-centred health service delivery or a clear allocation of responsibility for this strategy, the Health Strategic Plan 2016–2020 makes a commitment to patient-centred care in different ways (MoH, 2016):

- through the working principle of accountability, defined as “improving responsiveness and good governance by application of laws and regulations, customs, ethical standards

and norms, with emphasis on patient-centred health service delivery";

- by encouraging "behaviour change of providers in interacting with patients and consumers of health services and improv[ing] health-care seeking of the population";
- by strengthening "local accountability mechanisms to improve responsiveness of the health services through participation of community and local administrations in monitoring and providing feedback on health service quality and efficiency".

Raising the quality of care at public health facilities is at the heart of the donor-government-funded Health Equity and Quality Improvement Project (H-EQIP). This is the country's main health support project, managed through the MoH. It runs in parallel with, and funds significant parts of, the Health Strategic Plan 2016–2020. Other initiatives to improve quality have been taken through, for example, the Facility Assessment Level 2 process, which provides a baseline for quality monitoring as part of H-EQIP.

Decentralization and autonomy

Within a wider national programme of administrative reform of government services, innovative programmes have been introduced in recent years to decentralize elements of health sector administration and increase the level of autonomy in decision-making of OD and hospital health managers. A first step is the conversion of almost one third of ODs and a number of provincial referral hospitals to the status of special operating agencies (SOAs) by 2018. SOA is a title applied to an OD or provincial referral hospital in which the Director is given greater flexibility in human resource and financial management within the structures of the MoH administrative system (appointments and salaries) and receives funds directly through a performance-based service delivery grant that adds to MoH budget allocations. A proportion of the service delivery grant is allocated to staff incentive payments.

5.3.3 Health financing

Government funding for health care has increased significantly in recent years due to steep rises in tax and other government revenues within a

growing economy. Nonetheless, households are still the predominant source of financing for health care through OOP payments (Table 5.6). The THE has remained at a steady 6–7% of the GDP during the past two decades (which is high in comparison with neighbouring countries), though per capita spending at US$ 70 in 2015 remains limited. Government taxation revenues contribute on average 20% of THE; an additional 20% of THE comes from donor contributions (mostly in support of government health budget priorities, with a level of nongovernment funding as well). Public expenditure on health care therefore comprises on average 40% of THE while household OOP payments provide 60%.

Government expenditure on health care rose to US$ 222 million in 2015, equal to 6% of total government expenditure (or 12% of total government recurrent expenditure). In recent years, the donor contribution to government health expenditure has been falling as government budget contributions have risen, reflecting a stronger national fiscal situation. The financial sustainability of the public health system is now a concern for the government, which plans to further raise its share of CHE through budget funding and recently announced social security arrangements.

Table 5.6 Cambodia: Selected health finance indicators, 2000–2015

Indicators	2000	2005	2010	2012	2014	2015
Current health expenditure (CHE) per capita in US$	19.3	33.4	54.5	69.1	68.1	70.7
CHE as % gross domestic product (GDP)	6.4	7.1	6.9	7.3	6.2	6.1
Domestic general Government health expenditure (GGHE-D) as % CHE	20.2	20.2	19.7	19.4	19.9	22.1
External health expenditure (EXT) as % of CHE	8.5	13.9	22.7	19.4	16.8	18.8
Out-of-pocket (OOP) as % of CHE	70.2	59.2	51.8	60.5	63.1	58.4
GGHE-D as % general Government expenditure (GGE)	8.6	11.6	6.8	6.8	5.9	6.6

Source: WHO, 2018a

The government health budget provides the main source of funds for the public health infrastructure, supplies and staffing, and delivers subsidized care across a standard package of preventive, primary and curative services at health centres and hospitals (through the MPA and CPA). Revenues at government facilities are supplemented by nominal user charges approved

in 1996, with funded exemptions provided widely to the poor through the Health Equity Fund (*see below*). User-fee revenues provide much less than 10% of government spending on health care but constitute a significant source of operating revenues at the facility level.

With a public commitment to moving towards UHC, the government has also confronted the challenge of improving efficiency and cutting wastage across the public health system. For example, more than half the total health budget (excluding salaries) is spent on procurement; of the health budget, a total of 63% is spent on non-programme activities (Annear et al., 2015). Challenges remain in the distribution of budget funding to the lower levels of the health service, and inefficiencies in the purchase of drugs and medical supplies have at times confronted health planners (a 2011 World Bank Public Expenditure Review reported that expenditures on drugs and medical supplies were substantially higher than international average prices) (World Bank, 2011).

The potential for reducing administrative costs and inefficiencies – and increasing access to care – has been enhanced by an ongoing move away from direct budget funding to public health facilities (which is still predominant) and towards demand-side financing mechanisms. Chief among these has been the Health Equity Fund (HEF) for the poor, which originated in two districts in 2000 to reimburse health facilities (RHs and HCs) for the cost of user-fee exemptions provided to the pre-identified poor (who also receive transport and food subsidies). The OD-based HEFs (*see* Box 5.1) now cover all HCs and RHs nationally. Under current plans outlined by the National Social Protection Policy Framework, 2016–2025 and adopted through government regulations, HEF population coverage has been extended to additional targeted population groups, such as local government leaders, and will be expanded further to include people with disabilities, children and the elderly (RGC, 2017). In a limited number of locations, NGOs (local and international) provide voucher schemes for maternal care or voluntary community-based health insurance (CBHI), and there is a limited marker for private health insurance.

Box 5.1 Cambodia: Health equity fund

HEFs are Cambodia's principal social protection scheme and are an international example of an effective means to protect the poor from health care costs. The district-based HEFs reimburse health facilities for user-fee exemptions and provide costs for transportation, food and funeral expenses to beneficiaries. The first HEFs were implemented through international NGOs in two districts in 2000 and now operate in every OD, managed through the MoH.

Funded jointly by the government and donors, HEFs are an OD- and hospital-based demand-side financing mechanism used to fund user-fee exemptions for the identified poor at public health facilities. By 2013, HEFs had achieved 16% coverage of the Cambodia population, or 2.2 million people living below the poverty line, and provided reimbursement for 1.1 million outpatient and inpatient visits. By 2015, HEFs provided access to government health services (all hospitals and health centres nationally) for 3.2 million people below the poverty line, funding more than US$ 10 million in medical and non-medical patient benefits annually.

Beneficiaries are mostly pre-identified prior to seeking care by the IDPoor national household survey process implemented through the Ministry of Planning. In districts not covered by the IDPoor survey, HEF operators carry out post-identification at facilities when necessary. Eligibility for HEF coverage is automatic following pre- or post-identification.

The benefit package provided by HEFs covers the cost of user fees for access to care at HCs and RHs, including all services provided through the MPA (HCs) and the CPA (referral hospitals). Services are provided free of user charges to beneficiaries, and the HEF directly reimburses the cost to the facility monthly. Beneficiaries are reimbursed for the cost of transport, food and funeral expenses directly from the HEF.

Various evaluations have shown that HEFs increase utilization of government services by the poor, reduce OOP expenses, and reduce debt and asset sales for health care (Annear, 2010; Annear et al., 2016; Flores et al., 2013).

Source: Cambodia health system review (Annear et al., 2015)

The government is also working on plans to operationalize a national social security fund (NSSF), including health benefits for civil servants and private sector employees (funded through compulsory salary deductions) along

with other social security benefits (*see* Box 5.2). The NSSF currently provides work injury benefits to private sector and government employees, and is working to introduce health insurance benefits in the near future (though no deadline has been established). Managed as an autonomous agency under the Ministry of Social Welfare, the NSSF has been nominated as the government's national social health protection provider. It will eventually combine the HEF scheme with expanded population coverage, and the

Box 5.2 Cambodia: National Social Security Policy Framework 2016–2025

The National Social Security Policy Framework (NSPPF) is a long-term roadmap focusing on two main pillars: Social Assistance and Social Security.

Social Assistance is divided into four components: (1) emergency response, (2) human capital development, (3) vocational training, and (4) welfare for vulnerable people.

Social Security consists of five components: (1) pensions, (2) health insurance, (3) employment injury insurance, (4) unemployment insurance, and (5) disability insurance.

The Framework addresses four main areas: (1) a legal and regulatory framework, (2) an institutional framework, (3) a financial framework, and (4) human resources.

The NSSPF proposes to investigate the potential for new social assistance programmes, including (among others) a cash transfer programme for pregnant women and malnourished children. It will expand existing social security schemes, including the development of pension and health insurance schemes to achieve universal coverage of all citizens in both the formal and informal sectors. It proposes a feasibility study on an unemployment insurance scheme.

The Framework also proposes institutional reforms, including: establishment of a National Social Protection Council as the policy-level coordinator; a social security regulator to monitor existing schemes; the integration of all social security operators (including the NSSF, the HEF, the fund for veterans and the fund for people with disabilities) into a single operator; and a feasibility study on the establishment of a single social assistance agency to manage all social assistance funds.

Source: National Social Protection Policy Framework (RGC, 2017)

health insurance scheme for civil servants and private sector employees as a single purchaser of government health services (RGC, 2017).

There is a small voluntary health insurance market, comprising private for-profit insurance companies and not-for-profit CBHI schemes, which serve rural communities and urban workers, though coverage is low. Both schemes target non-poor formal- and informal-sector workers who can afford to pay premiums, and the government looks to the possibility that such arrangements may help to extend coverage to the informal sector.

The social health protection initiatives have led to a reduction in health-related poverty. The incidence of impoverishment from health spending (households becoming poor due to health expenditure) fell from 2.5% of households in 2007 to 1.7% in 2013; household catastrophic health expenditure decreased from 5.6% of households in 2007 to 4.9% in 2014. At the same time, the average amount of annual per capita OOP health expenditure increased from US$ 14 in 2007 to US$ 69 in 2014 (MoH, 2016).

5.3.4 Physical and human resources

Despite recent improvements, access to health services is constrained by the relatively small size of the health workforce and the low hospital bed-to-population ratio. This is particularly evident in the public health system, and much of private sector service delivery – particularly in diagnostic services and curative, non-hospital care – has emerged to fill the gap. The government has continued to invest in infrastructure for health, particularly by expanding the number of primary care facilities in more remote areas – where HCs increased in number between 2008 and 2017 from 967 to 1190 and continue to expand – while the number of RHs increased from 84 to 117 in the same period (Table 5.7).

Table 5.7 Cambodia: Number of public health facilities, 2017

Facility level	Facility type	Number
Referral Hospitals	National	9
	Municipal/Provincial	24
	District	84
Health Centres	Health Centres	1190
	Health Posts	119
TOTAL		**1426**

Source: MoH, 2018

Even so, the need to further strengthen public health service delivery is widely recognized as central to MoH plans. The ratio of public hospital beds to population remains low, narrowing only from 1/1490 in 2008 to 1/1446 in 2015 (MoH, 2016) or an average of 0.71 per 1000 population, which is considerably lower than Thailand (2.1) and Viet Nam (3.1). Improved sanitation is available in most public health facilities, including incinerators for medical waste and toilet facilities. The availability of state-of-the-art diagnostic medical equipment, such as magnetic resonance imaging (MRI) or computed tomography (CT) scanners, remains limited and maintenance is an issue; consequently, most of such facilities are provided in the private sector.

The number of facilities in the private sector continues to rise rapidly – moving from a total of 3755 in 2009 to 12 641 by 2017 (MoH, 2016; MoH, 2018) – while the majority remain small clinics and nursing or delivery care rooms (Table 5.8).

Table 5.8 Cambodia: Number of private health facilities, 2017

Types of private health establishments	Number
Patient care room	3959
Consultation cabinet	3695
Pharmacy and subpharmacy	2450
Maternity care room	1156
Dental care room	760
Clinic	281
Polyclinic	56
Medical laboratory centre	54
Dental hospital	47
Medical laboratory	34
Otorhinolaryngology clinic	28
Ophthalmology clinic	24
Dermatology clinic	23
Physiotherapy room	19
Private hospital	16
Maternity clinic	11
Psychology clinic	11
Cosmetic centre	10
Health-care liaison office	7

Source: MoH, 2018

Providing trained staff at the growing number of public health facilities and meeting the demands of a growing population remain challenges, despite the considerable progress. Compared to regional neighbours (according to WHO Global Health Observatory data):

- the population density of physicians is comparable to Lao People's Democratic Republic and Thailand, though below Viet Nam;
- the density of nurses and midwives is comparable to Lao People's Democratic Republic, but lower than Thailand and Viet Nam;
- the ratio of nurses and midwives to physicians is in the middle of the regional range.

While the total number of public health personnel has increased – from 18 096 in 2008 to 20 954 in 2015 – the MoH estimates that a total of 36 000 will be required by 2020 to meet service delivery demands (MoH, 2016). Global Health Observatory data suggest, however, that training of new health staff has so far not kept pace with the rise in population numbers (Table 5.9).

Table 5.9 Cambodia: Health workforce density per 1000 population, 1996–2014

Category	1996	2000	2008	2010	2014
Physicians	0.113	0.168	0.244	0.229	0.143
Nurses and Midwives	1.055	0.912	0.842	0.853	0.951

Source: WHO, 2018b

Balancing the expanding number of health facilities with health workforce needs together with a national commitment both to raise the quality of care at government hospitals (including specialist services) and increase coverage of primary care services presents a complex challenge. In these conditions, the distribution of the workforce is as critical as its production:

- by 2015, 79% of the total health workforce was based at the provincial and OD level (MoH, 2016), reflecting the continued

emphasis placed on building rural and primary health care services since the 1995 Health Coverage Plan;

- nurses and midwives together comprise 70% of the national health workforce, with a locally reported 3.47 nurses to each doctor (or up to 6.7 according to the latest WHO Global Health Observatory data for 2014);
- in 2008, 79 out of 967 HCs had no midwife; by 2015 all HCs had at least one primary midwife and 85% had at least one secondary midwife (MoH, 2016);
- more than 40% of general medical practitioners are located at central-level facilities; at central and provincial levels (not including ODs), medical doctors are the largest component of the health staff (MoH, 2016).

At certain times, health workforce development has been directed to meet designated health priorities. During 2010–2015, a major expansion of midwife numbers (increasing by 29% overall) was directed at successfully reducing the unacceptably high national maternal mortality rate. During the same period, the number of nurses rose by a more modest 6% (Annear et al., 2015) and the number of general medical practitioners, specialists, dentists and pharmacists also increased.

The government's University of Health Sciences remains the major provider of pre-service education for physicians, nurses, midwives and pharmacists, although there is a rapid increase in the number of enrolments in private-sector medical universities. The National Institute of Public Health is the main provider of public health training together with five secondary schools for Technical Medical Care (including four regional training centres) and the Health Science Institute of the Royal Cambodian Armed Forces. As well, there is a growing number of private providers of tertiary education for health workers; by early 2016 there were 11 licensed private universities (including one institute) offering a wide range of degree programmes.

5.3.5 Provision of services

The role of the government and public–private mix of service provision is complicated by a number of factors in Cambodia:

- the government is the main provider of the national health infrastructure, and of secondary and tertiary hospital services;
- 60% of THE is OOP spending, with the large majority going to private sector providers;
- two thirds of patients using curative care first go to private providers (NIS, 2015);
- the government is the major provider of public health and preventive health services (including reproductive, MCH, and communicable disease and NCD control programmes).

In principle, the government health-care structure is designed to accommodate referral of patients from primary care to higher levels; in practice, there are no restrictions on patients' ability to choose a provider. During an episode of illness, most patients rely first on home remedies (especially in rural areas) or self-prescribed medication from local pharmacies or drug sellers; people commonly choose to consult private providers ahead of public facilities; if the patient's condition deteriorates, private providers generally refer them to a government hospital. Critically ill or injured patients usually bypass primary care facilities and seek care directly at public or private hospitals without referral (Annear et al., 2015).

Coordination with private providers remains a challenge for government planners. Most private providers are drug shops or single-person practices. Private pharmacists (many unqualified) are a common, frequently accessed, yet inadequate source of self-medication for most people. Most private providers with formal training are simultaneously public employees (dual practice). Access to private hospital care is greatest in urban areas. The registration of all private medical and paramedical facilities was made compulsory under a law adopted in late 2000, though the resources available for monitoring compliance are limited (MoH, 2013; MoH, 2016).

Management of NCDs

The prevention and treatment of NCDs – which comprise more than half of the national burden of diseases – is recognized as a priority in the Health Strategic Plan 2016–2020 and the National Strategic Plan for the Prevention and Control of NCDs 2013–2020 (MoH, 2013). The current capacity to deliver services is constrained and access to treatment is characterized by large inequities favouring wealthy and urban populations (for expensive diagnostic tests and treatment), while few if any services are available for those living outside Phnom Penh. The NCD Strategic Plan identifies four key preventive strategies for common cancers: tobacco control (lung cancer), hepatitis B vaccination (liver cancer), cervical screening and human papilloma virus (HPV) vaccine (cervical cancer). Key strategies to address management of NCDs include: integrated management of NCDs through primary care, enhanced NCD surveillance through a hospital-based cancer registry and risk factor surveys, and strengthened coordination within the MoH and across sectors. Basic screening and treatment for NCDs are included in the MPA at HCs and the CPA at referral hospitals.

Management of CDs, AMR and pandemic preparedness

National centres within the MoH have responsibility for vertical infectious disease programmes, including HIV/AIDS, malaria and TB, with support from the Global Fund. TB control provided through directly observed treatment, short-course (DOTS) has reduced the rates of MDR-TB to 1.4% with a more than 90% success rate. Malaria control has also resulted in reductions in incidence and deaths from malaria, from 219 in 2009 to 10 cases by 2015.

Successful prevention and treatment of HIV has helped to reduce prevalence among adults aged 15–49 years from 1.6% in 2000 to 0.6% by 2014, with over 90% survival after 12 months on ART. With ARVs available to approximately 80% of adults and children estimated to be in need of treatment, the universal access target has been achieved. Since 2015, availability of ART to prevent mother-to-child transmission of HIV has exceeded 80%.

However, there remains a need to improve the national monitoring system for AMR and to strengthen laboratory quality management. Artemisinin-resistant falciparum malaria parasites remain a public health concern, in common with other countries. A National Policy (in 2014) and Strategy (in 2015–2017) were adopted by the MoH and, in December 2017, three key ministries (Health; Agriculture, Forestry and Fisheries; and Environment) met together with the Food and Agriculture Organization (FAO), WHO and the World Organisation for Animal Health at an inaugural national meeting to develop a multisectoral action plan to combat AMR. The plan is due for endorsement in mid-2018 (FAO, 2017).

National structures have been established for pandemic preparedness, as well as national strategies and response plans, and the rapid response teams and interministerial working groups are functioning. Further development of national public health emergency preparedness and responses plans incorporating a multihazard approach has been identified as a priority (MoH, 2016).

Management of MCH

Maternal and infant mortality rates have declined steeply in recent years, partly as the result of innovative programmes through the MoH. In one scheme, midwives are paid a cash bonus (~US$ 10–15) for each live birth delivered at a health facility. Increased facility access through the HEFs and a number of local maternal health voucher schemes have also played a part. As a result, the rate of skilled birth attendance rose from 44% to 89% and institutional deliveries from 22% to 83% between 2005 and 2015. Nearly 80% of newborns receive a postnatal check-up within two days of delivery, and 93% of children aged 0–5 months are breastfed. Moving above a 75% coverage rate for fully immunized children (achieved nationally by 2015) has been difficult due to provincial variations in primary care delivery; now, almost all HCs have at least one primary and one secondary midwife. Stunting among under-five children remains high at 31.5% (estimated, 2015) (MoH, 2016).

5.4 Health system performance

Starting from a relatively low base, improvements have been evident in both service delivery and clinical quality of care. Addressing the relatively low quality of care at government facilities is at the centre of the Health Strategic Plan 2016–2020.

5.4.1 Effectiveness and quality

Improved clinical care is evident in improved diagnostic capacity as well as reproductive, maternal and child health care. Routine quality-of-care assessment scores at all HCs and RHs within at least 16 provinces (pioneered by the HEF and now generalized) indicate a recent rise in the quality of clinical performance in the range of 34–69% (MoH, 2016). Hospital mortality rates decreased from 1.7% of hospitalized patients in 2008 to 0.97% in 2015. An important part of the plan to raise the quality of care is increased attention to strengthening pre-service medical education within the Health Strategic Plan.

These efforts to improve the quality of government health services are consistent with the wider national programme of government administrative reform. The MoH has been identified as a pilot ministry for trialling innovations in government administration, with increased management autonomy, staff incentive payments and a move to contracting service provision within the MoH.

More than a third of health ODs have already been designated as SOAs for service delivery. The SOA structure provides an increased level of autonomy to OD and health facility managers within the MoH system, including clarifying job descriptions and performance requirements, improving staff discipline, and the provision of incentives (MoH, 2016). Already, SOA status has commenced in 14 provinces at 10 provincial hospitals and 26 ODs with 21 RHs and 394 HCs. Funded partly through the MoH donor H-EQIP, SOAs are supported with a service delivery grant in addition to budget allocations (World Bank, 2017b). The service delivery grant supports running costs and staff incentives, and will now be developed as a performance-based financing mechanism for primary-

and secondary-level health facilities based on the achievement of service delivery results (MoH, 2016; World Bank, 2017a).

A second innovation is the Public Administrative Enterprise (PAE), an institutional structure applied to nominated public agencies and institutions. The PAE structure provides a level of financial and management autonomy to central-level public institutions. Five national hospitals, two health educational institutions, and the national medical laboratory have been granted PAE status. Initial results indicate some improvement in performance, with better management of revenue enabling improvements in basic infrastructure, investment in high-tech equipment, and improved staff motivation through incentives (MoH, 2016).

5.4.2 Access to health care

While the majority of health expenditure is in the private sector, access to health care has increased generally as a result both of the expansion of the government health infrastructure and reduced financial barriers for the poor. A dramatic increase in the utilization of government HCs and RHs has been evident (MoH, 2016; NIS, 2015). This increase was due in part to improved economic conditions and the expansion of the public health network. It was increased by the rapid rise in the number of HCs covered (in addition to all RHs) by HEF benefits, which provide access to government services for the poor. RH inpatient and outpatient visits also increased (Annear et al., 2016).

Consumption of public health services measured by per capita outpatient consultations per year increased from 0.45 in 2008 to 0.61 in 2015: 86% of the total new case consultations were seen by HCs and the remaining 14% by hospitals. Hospital bed occupancy rates increased by about 4% annually, rising from 61% in 2008 to 88% in 2015, and the average length of stay per hospitalized patient was 5 days (MoH, 2016). In rural areas, people predominantly use private sector providers (drug stores 38% of those seeking care, private clinics 35% and private hospitals 3%) and government HCs to a lesser extent; in the capital, people are more likely to use significantly more expensive private hospitals and private clinics.

This ongoing rise in utilization is prompted by significant increases in care-seeking when ill from both public and private providers. Approximately 15% of Cambodians (or 2.3 million) report illness during an average month (according to estimates confirmed by the Cambodia socio-economic survey 2015), with a higher rate in rural than in urban areas. Almost all of these seek some form of care according to the survey data: during 2015 this equalled 63% in the private sector (higher in urban than rural areas), 24% in the public sector (higher in rural than urban areas), with 12% through self-care and 1% other (NIS, 2015). Disadvantaged groups are increasingly being represented in these numbers: for the poor through the HEF; for people with disability, rising to 95% of those who are ill; and for people with chronic diseases rising to 80% in recent years. Care-seeking from formal providers is rising, reaching 82% by 2013, and home care falling to as little as 0.2%. These trends are continuing.

Nonetheless, health outcomes still exhibit urban–rural and rich–poor differentials and are low compared to regional averages. MCH outcomes vary according to socioeconomic status and geographical location: the fertility rate for women in the poorest income quintile is more than double that of the richest quintile; children in the poorest quintile have a threefold higher risk of death before their fifth birthday than those in the richest quintile; stunting is more than twice as common among children in the poorest quintile than in the richest (Annear et al., 2015).

5.4.3 Resilience

With improvements (if gradual) in routine health-care delivery under way, an additional challenge is the capacity of the public and wider health system to adapt effectively to changing environments, sudden shocks or crises, including emerging and re-emerging infectious diseases. Resilience is also a function of the ability to sustain rising health-care costs with fiscal sustainability.

Building resilience is a work in progress. In the most recent assessment, the Joint External Evaluation process in 2016 identified only eight of 48 indicators for which capacity was sufficient to prevent, detect and respond to infectious disease and other public health emergencies (WHO, 2017). The strongest areas were coordination, communication and advocacy,

event-based surveillance and immunization. Areas of weakness included shortages in workforce training in public health, lack of regular exchange between the human and animal health sectors related to outbreak investigations, and gaps in planning and policy-making. The development of a national strategy to combat AMR and strengthen national laboratory microbiology testing has not yet been matched by an adequate surveillance programme for AMR. Improvements have been seen in the existing indicator-based and event-based surveillance systems for human disease, though surveillance in the animal health sector is much less developed. Many of the 94 national public laboratories at different levels of the health system (with quality management systems to monitor biosafety) are dependent on external funding. Systems for public health emergency preparedness need further development.

Sustained economic growth has been the foundation on which the fiscal space for government health spending has increased, with an anticipated further rise in the budget allocation from US$ 292 million in 2015 to US$ 538 million by 2020 (MoH, 2016; RGC, 2014). The MoH anticipates a reduction in the "funding gap" (to be funded by international donors) for implementation of the Health Strategic Plan 2016–2020, from US$ 318 million in 2016 to US$ 158 million in 2020. The MoH is committed to using evidence-based information to advocate for predictable government allocations for health as well as exploring innovative approaches to domestic resource mobilization, such as earmarked taxes and public–private partnerships.

5.5 Conclusions

The Cambodian health system is passing from an extended period of piloting and experimentation into a period of consolidation and scaling up of proven interventions. From a period when the strengthening of the supply side was the greatest need, then to recent experiences in improving access to care through demand-side financing innovations, the health system has entered a period where improved quality of care is paramount. The third Health Strategic Plan for 2016–2020 identifies two key challenges: responding to the epidemiological and demographic transition, and achieving equity in access and financing across the population. To these

might be added the likely reduction in development assistance funding, as Cambodia transitions to a lower-middle-income country.

Future policy directions involve a shift to a single-payer health fund combining through the NSSF, which requires both the consistent delivery of quality health care and more efficient management of service delivery. In the public sector this requires attention to funding, management processes and the remuneration of public sector workers. For the private sector, it poses the immediate need for extended regulation, accreditation and enforcement. The government and MoH now see moving towards UHC as the framework for the continuation of the health reform process.

The longer-term process of health reform has been guided by consistent national health planning, culminating in the adoption of consecutive Health Strategic Plans for 2003–2007, 2008–2015 and 2016–2020. Building a health service infrastructure, providing access to the poor and strengthening the delivery of government services have been at the heart of these plans. Much is left to be done even in the wake of ongoing progress. Recent health reforms have focused on strengthening the MoH's capacity to manage health-service delivery in line with the government's broader public administrative reform, which aims at improving the efficiency and effectiveness of government services. The greater capacity of government service delivery will, in the coming period, provide a firm foundation on which the MoH and government can address the wider needs for stewardship and management of the emerging mixed health system in Cambodia.

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