HEALTH EQUITY AND ITS DETERMINANTS IN THE WESTERN PACIFIC REGION

World Health Organization
Western Pacific Region

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ABBREVIATIONS

ART	antiretroviral therapy
CVD	cardiovascular disease
CRD	chronic respiratory disease
DHS	demographic and health survey
ILO	International Labour Organization
MICS	multiple indicator cluster survey
NCD	noncommunicable disease
PPP	purchasing power parity
RMNCH	reproductive, maternal, neonatal and child health
SDG	Sustainable Development Goal
UHC	universal health coverage
WASH	water, sanitation and hygiene

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NOTES: Throughout all the tables and figures of this document, due to space constraints, the Federated States of Micronesia may be referred to as "Micronesia", and the Lao People's Democratic Republic as "Lao PDR". Presently, all member countries of the World Bank in the Western Pacific Region are classified as middle- or high-income; throughout this report, countries are referred to as lower-middle-, upper-middle- and high-income countries. The Western Pacific Region still contains countries on the United Nations Department of Economic and Social Affairs list of least developed countries (LDCs).

EXECUTIVE SUMMARY

This report takes stock of trends in health equity in the Western Pacific Region based on available evidence and data. It covers a range of intersectoral health-relevant indicators to examine the existence and magnitude of inequities in health and its determinants. The report details encouraging messages about the state of health equity, along with challenges to progress.

People living in the Western Pacific Region have a wide range of health experiences that tend to be patterned according to demographic, social, economic and geographic characteristics. In some countries, there are positive examples of national improvements in health intervention coverage and health outcomes being coupled with a narrowing of inequities over time, driven by faster improvements among disadvantaged subgroups. However, inequities persist in most countries and across most dimensions of health. Health inequities predominantly burden the poorest and least educated groups, as well as those residing in rural areas. Men tend to have more adverse behavioural and biomedical risk factors and health outcomes overall. However, women in the most disadvantaged groups face particularly acute inequities.

Health inequities in the Western Pacific Region: a snapshot

Large gaps in morbidity and mortality were evident between men and women, with men faring more poorly across all indicators in most countries.

» HIV incidence is higher among men than women. While substantial progress has been made in reducing HIV incidence overall, progress on addressing gender gaps has been inconsistent.

» Men are profoundly more likely to die from external causes than women in most countries. Men are up to five times more likely than women to die in road traffic crashes, 10 times more likely to die from unintentional poisoning and suicide, and eight times more likely to die as a result of homicide.

» Premature mortality attributable to noncommunicable diseases (NCDs) is higher among men than women in all countries. The increased risk is 50% or higher in most countries.

Inequities were evident across a number of reproductive, maternal, neonatal and child health (RMNCH) indicators. Women in the most disadvantaged subgroups (the poorest, the least educated and those in rural areas) and their babies were most vulnerable to adverse outcomes.

» The proportion of deliveries in health facilities and births attended by skilled health personnel differed up to eightfold between the richest and poorest and up to threefold between those in urban and rural areas.

» Neonatal mortality differed by at least 85% between the richest and poorest and between those in urban and rural areas. Maternal education was a profound determinant of neonatal mortality in some countries.

» Children in poor households and whose mothers had no education were least likely to be fully immunized at 1 year of age. While there have been improvements in immunization coverage over time, there is little indication that inequities have decreased.

Behavioural and biomedical risk factor indicators showed different dimensions of inequity.

» In most countries undernutrition prevalence in children aged under five years was at least twofold higher among children whose mothers had no education compared with children whose mothers had attended higher education and between children living in the poorest households compared with the richest.

» Men tended to fare more poorly than women for behavioural risk factors (alcohol consumption and tobacco use). Physical activity was an exception, with women less likely to meet guidelines.

» Raised fasting blood glucose and elevated blood pressure were more common among men than women. However, women tended to be at higher risk for overweight and obesity in the Region's lower-middle-and upper-middle-income countries; the inverse was evident in high-income countries. Biomedical risk factors were more prevalent in urban areas and were inversely associated with education level in higher-prevalence countries.

Indicators relating to material and social circumstances of communities showed divergent patterns of inequity across the Region.

» Those in the richest households were up to 60% more likely to have access to at least basic drinking water and up to sixfold more likely to have access to at least basic sanitation.

» Wide regional variation was evident in patterns of violence and exploitation. Women comprised the majority of trafficking victims (79%), with most trafficked for sexual exploitation. Men were more likely to be trafficked for forced labour.

» In some countries, close to one third of women have experienced physical violence by an intimate partner and more than 40% have experienced sexual violence. Higher education and household wealth were protective against intimate partner violence in higher-prevalence countries.
» Social assistance and labour market coverage tends to be higher in rural areas and among the poorest quintile. Social insurance coverage, in contrast, tends to favour those in wealthier quintiles and in urban areas.
» While there have been marked reductions in the proportion of the population living below the poverty line, progress towards reducing income inequality has been inconsistent across the Region.

Accelerating equity-sensitive monitoring

Despite an increasing focus on improving equity monitoring in global and regional health strategies, impediments to systematic equity-sensitive monitoring persist. To facilitate effective monitoring of progress towards health equity and its determinants, the report recommends the following:

» Commit to establishing health information systems that are sufficiently powered to undertake multiple stratification analysis.
» Invest in data collections to monitor the inequitable distribution of health across the lifespan and population, to supplement relatively good data for monitoring RMNCH inequities.
» Improve administrative health datasets to facilitate equity monitoring and overcome limitations with the statistical power of survey data.

INTRODUCTION

The Sustainable Development Goals (SDGs) call for an integrated approach to "just, rights-based, equitable and inclusive" action to address today's challenges and promote growth, social development and environmental protection for all *(1)*. This places equity at the centre, with particular focus on disadvantaged groups that are typically excluded from social benefits, such as a good education, health care and economic participation while facing higher burdens of disease and disability.

Health equity, defined as the absence of avoidable, unfair or remediable differences in health among groups of people, whether those groups are defined socially, economically, demographically, geographically or by other means, is not a new idea. It has long been a stated or implied goal of global and regional health strategies. However, despite impressive improvements in aggregate indicators of health across the Western Pacific Region in recent decades, inequities within and between countries continue to pose challenges to health and development. Advancing health equity has received

new impetus as part of the SDGs, with all 17 goals and 169 targets interwoven with health considerations within a broader equity framework *(2).* Health equity is central to advancing universal health coverage (UHC), which emphasizes the need to ensure equitable access to quality health care by all, without enduring financial hardship. UHC is a specific target under SDG3 as well as the platform that brings together programmes and actions for health and development for all *(3).* Progress towards health equity will be driven in large part by greater access to needed health services of good quality. In addition, action to ensure the equitable distribution of broader determinants of health, including attention to the circumstances in which people grow, live, work and age, will be required to achieve sustainable equity in health *(4).*

The task of accelerating progress towards health equity in the Western Pacific Region has highlighted the need to understand the existence and magnitude of inequities in health and its determinants between socioeconomic groups and by gender, geographical area, and other indicators of social position. Data linking measures of health with measures of social identity are needed to monitor progress and to ensure that no one is left behind. Experience shows that progress towards health equity is most effective if health data systems incorporate routine monitoring of health inequity. Countries without basic data on mortality and morbidity by sociodemographic indicators have faced difficulties moving forward on the equity agenda *(4).* The SDGs acknowledge the importance of routine monitoring of equity, with target 17.18 setting out the need to "increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts", particularly for least developed countries and small island developing states.

This report explores equity-stratified cross-sectional population-wide datasets for countries across the Western Pacific Region in order to measure inequities in health and its determinants. By showcasing how the distribution of resources and societal and political structures differentially affect people's chances to be healthy, the report provides a foundation for improved monitoring of progress towards the equitable distribution of health and well-being, and forms an evidence base for local efforts to target policies and programmes to systematically improve health for all.

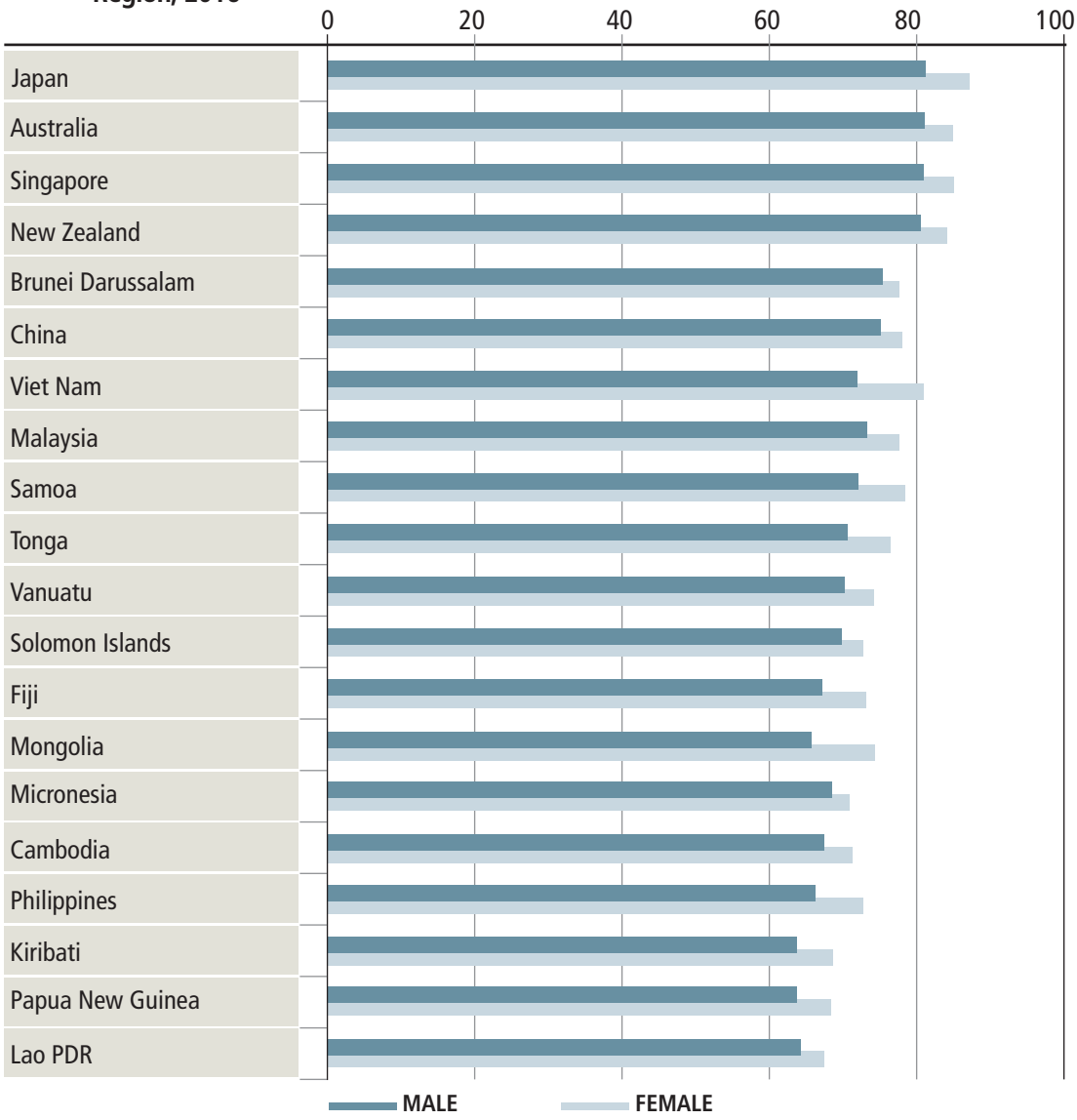
1 DIFFERENCES IN **HEALTH STATUS**

Life expectancy

As is evident globally, women have higher life expectancy than men in all countries across the Western Pacific Region for which data are available. This gender gap in life expectancy varies widely across the Region: in 2016, newborn girls in Brunei Darussalam could be expected to live 2.3 years longer on average than newborn boys. In Viet Nam, life expectancy for girls was 9.2 years longer than for boys (Fig. 1).

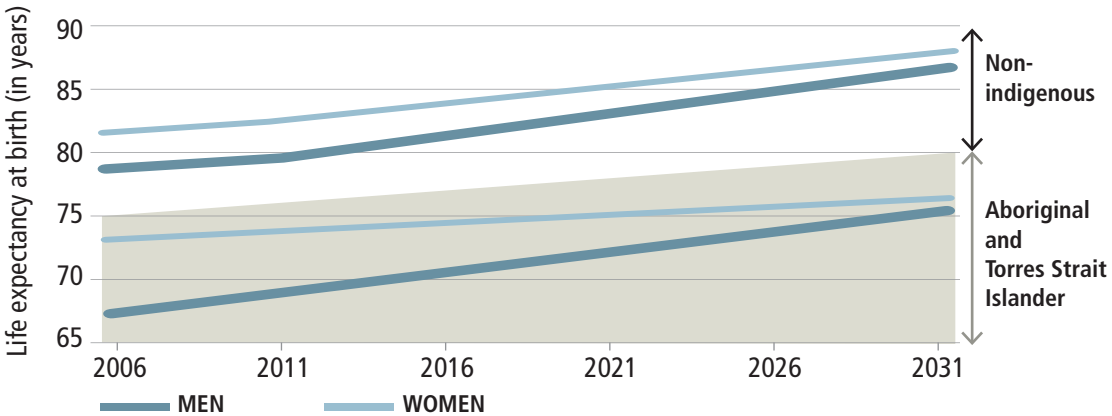
In Australia, gender inequities in life expectancy vary according to ethnicity, with Aboriginal and Torres Strait Islanders being consistently worse off (Fig. 2). Life expectancy for an Aboriginal or Torres Strait Islander boy born in Australia between 2010 and 2012 was 10.6 years lower than for a non-indigenous boy, and for girls the difference was 9.5 years. Current trajectories demonstrate that indigenous people's life expectancy gap is not on track to be closed by the end of the SDG era.

FIG. 1 Life expectancy at birth (in years), by sex, selected countries in the Western Pacific Region, 2016



Source: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Aug. 2018).

FIG. 2 Life expectancy at birth (in years), by sex and indigenous status, Australia, 2006–2031



Source: Australia's Health 2018. Canberra: Australian Institute of Health and Welfare; 2018. (https://www.aihw.gov.au/reports/australias-health/australias-health-2018/data#page5, accessed Sept. 2018).

Morbidity and mortality

Infectious disease

SDG targets aim to end the epidemics of HIV/AIDS, tuberculosis (TB), malaria and neglected tropical diseases by 2030, as well as combat hepatitis, waterborne diseases and other communicable diseases. While many countries in the Western Pacific Region are performing well on these targets relative to global performance, insufficient data exist to comprehensively monitor within-country inequities.

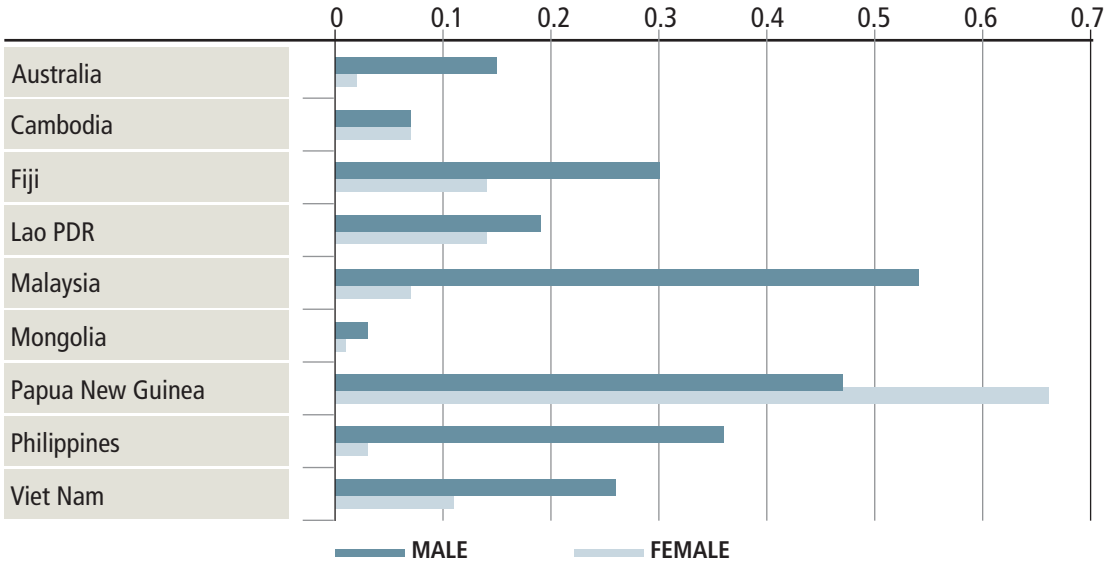
Patterns of HIV incidence are strongly gendered in the Western Pacific Region. In most countries for which sex-disaggregated data are available, men are significantly more likely to contract HIV than women (Fig. 3). For instance, in the Philippines, HIV incidence among men aged 15 to 49 years is 12 times higher than among women of the same age. Papua New Guinea presents an exception, with a higher incidence of HIV among women.

Substantial progress has been made in reducing HIV incidence in the Region between 2000 and 2016, however, progress on addressing gaps between men and women has been inconsistent (Fig. 4). Since the beginning of the century, Cambodia has eliminated the 30% gap in HIV incidence between women and men. In the Philippines, the incidence of HIV among men has increased during the same period, while incidence among women has remained constant. The most recent estimates identify the highest incidence of HIV in the Region among women in Papua New Guinea at 0.66 cases per 1000 uninfected women aged 15 to 49 years.

In Viet Nam and the Philippines, profound inequities patterned according to level of education are evident in knowledge of HIV or AIDS (Fig. 5). Among those with no education, fewer than half had heard of HIV or AIDS, with the degree of inequity among those with primary education or higher less pronounced. In Cambodia, knowledge about HIV or AIDS was close to universal across education categories (Fig. 5). These disparities are not patterned according to gender. In the absence of data describing the incidence of HIV across subpopulations, information about inequities in knowledge can serve as a starting point for prevention efforts.

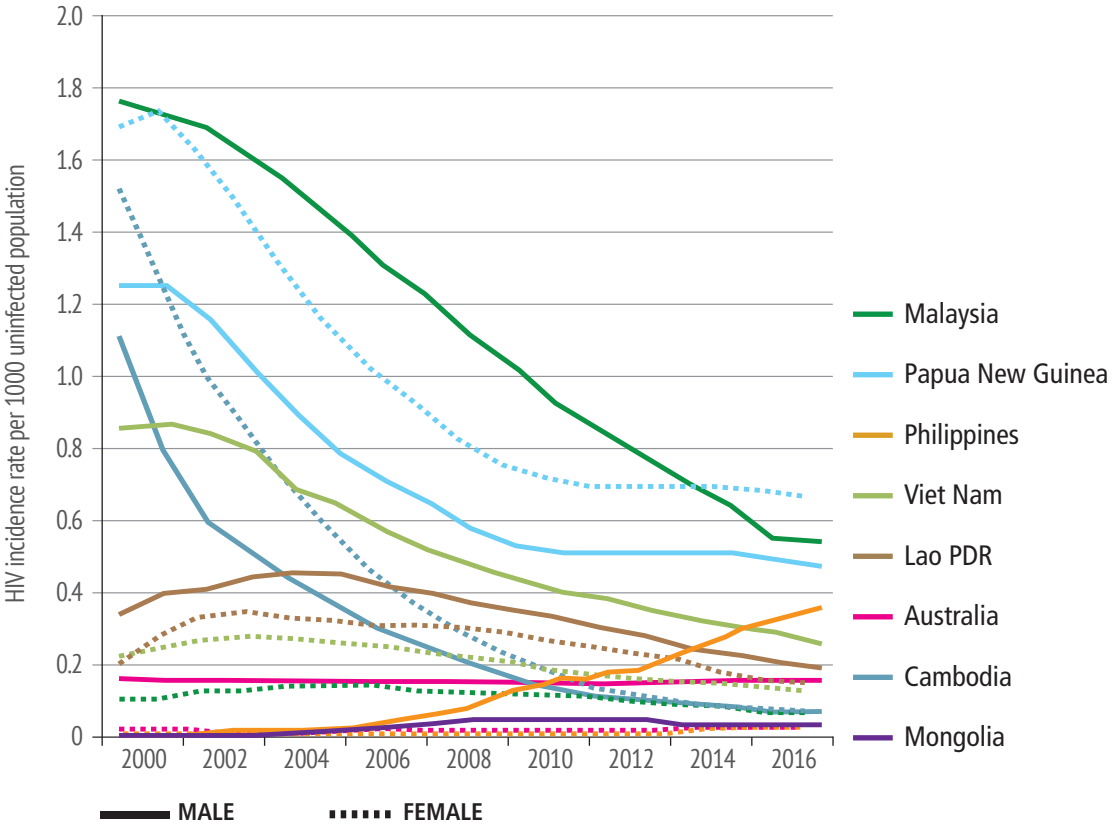
Antiretroviral therapy (ART) can effectively reduce HIV-related morbidity and mortality among people living with HIV, as well as reduce transmission. However, people living with HIV in key populations may face stigma and discrimination barriers to accessing services that provide ART (Fig. 6). In Cambodia, ART coverage is three times higher among men who have sex with men living with HIV and transgender people compared with people who inject drugs. In Viet Nam by contrast, coverage is higher among those who inject drugs than among men who have sex with men.

FIG. 3 HIV incidence rate per 1000 uninfected population aged 15–49 years, by sex, selected countries in the Western Pacific Region, 2016



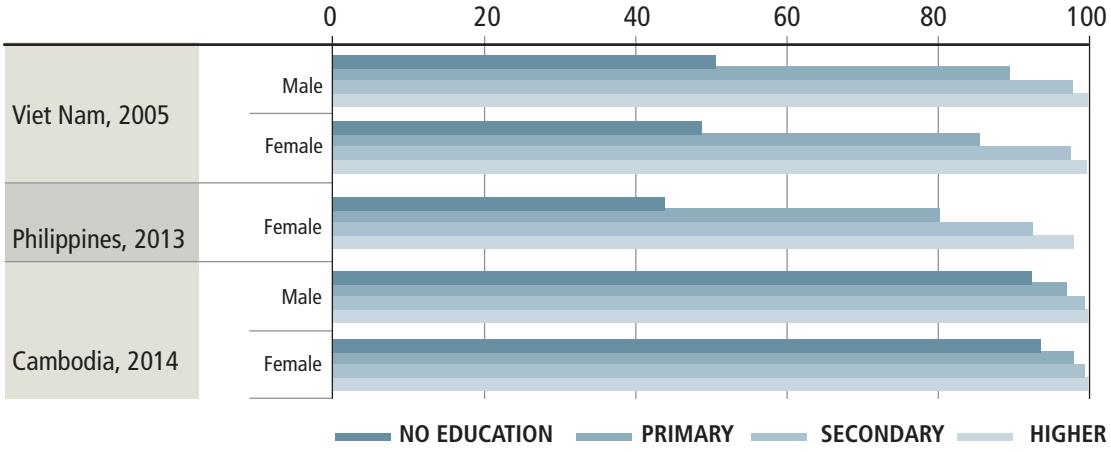
Source: UNAIDS data 2000–2016 in: Sustainable Development Goals Indicators Global Database (https://unstats.un.org/sdgs/indicators/database/, accessed Jul. 2018).

FIG. 4 HIV incidence rate per 1000 uninfected population aged 15–49 years, by sex, selected countries in the Western Pacific Region, 2000–2016



Source: UNAIDS data 2000–2016 in: Sustainable Development Goals Indicators Global Database (https://unstats.un.org/sdgs/indicators/database, accessed Jul. 2018).

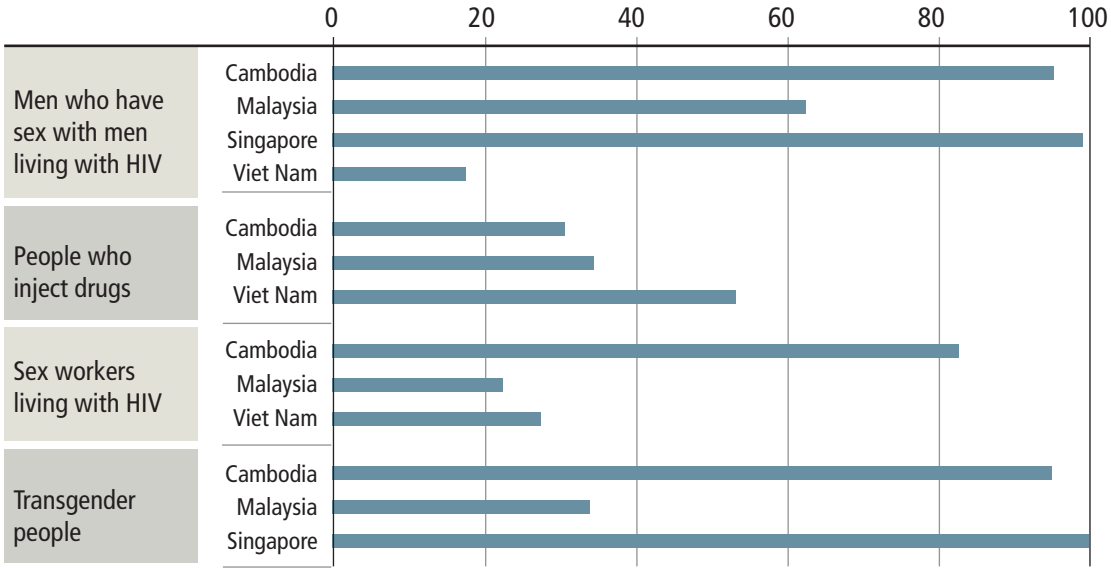
FIG. 5 Proportion of persons who have heard of HIV or AIDS, by level of education and sex, selected countries in the Western Pacific Region various years (in percentage)



Note: Data for men in the Philippines not available.

Source: The DHS Program [website]. United States Agency for International Development (http://dhsprogram.com, accessed Jul. 2018).

FIG. 6 Antiretroviral therapy coverage among key populations, selected countries in the Western Pacific Region, 2017 (in percentage)



Source: AIDSinfo, data in: Global AIDS Monitoring [online database]. UNAIDS (http://www.aidsinfoonline.org/gam/libraries/aspx/home.aspx, accessed Aug. 2018).

Injury

Injuries are an important public health concern, causing 1 million deaths annually in the Western Pacific Region. Injuries take a particular toll on children and adults in their working years, with deaths from external causes being the leading causes of death among people aged 5 to 49 years in the Region. Gender inequities are evident in deaths attributed to external causes, with almost twice as many men than women killed by injuries. These disparities arise from gendered differences in exposures to risk factors, including occupational exposures, alcohol consumption and psychosocial factors. However, it is important to look beyond mortality to observe the complete picture of inequity. As discussed below, some types of violent injuries predominantly affect women, with lifelong health, social and economic impacts. There is a scarcity of disaggregated data describing the distribution of injury among men and women.

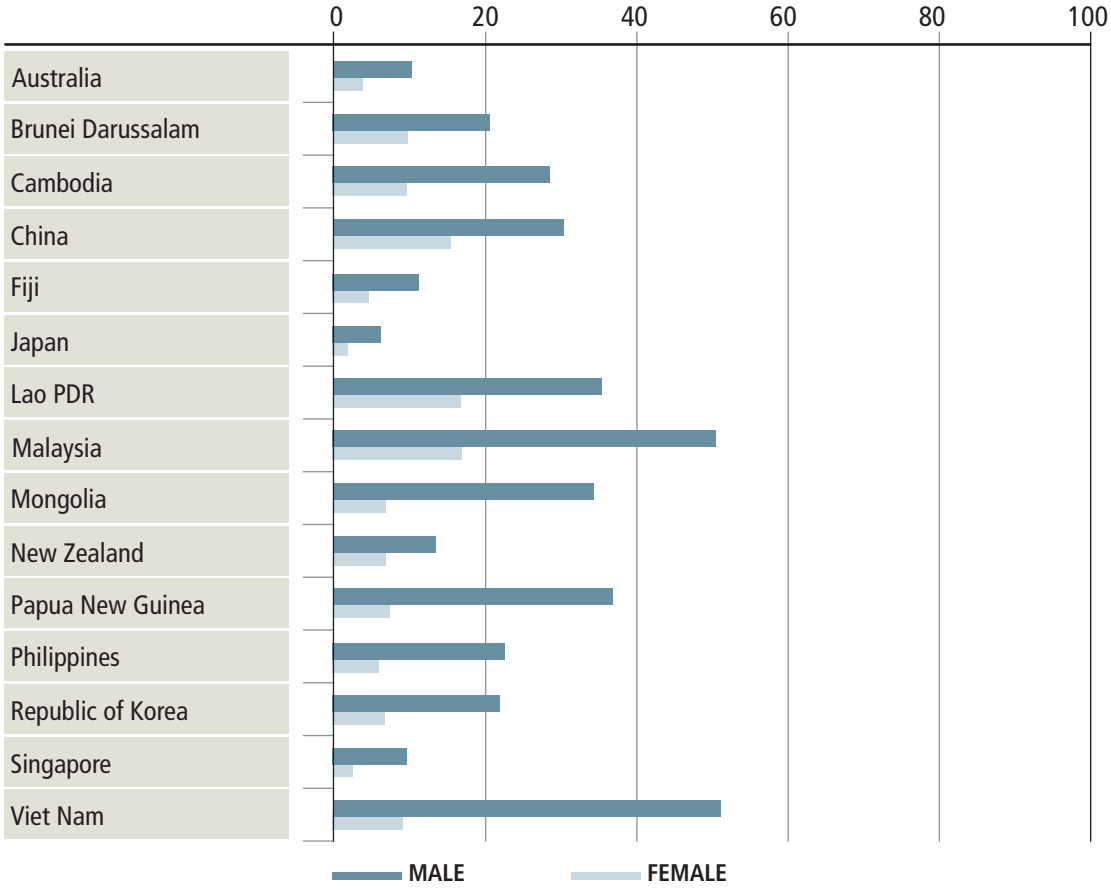
Of all people killed on the Region's roads in 2013, 65% were male *(5)*. The degree of gender inequity in deaths from road traffic injuries differs widely across the Region (Fig. 7). In Brunei Darussalam, China and New Zealand, men are around twice as likely to die from road traffic injuries as women, while in Viet Nam the rate is more than five times higher among men than women.

Unintentional poisonings can result from inadequate management of hazardous chemicals and pollution. The mortality rate for unintended poisoning in the Western Pacific Region is estimated at 1.4 deaths per 100 000 population, which is close to the global rate of 1.5. Mortality attributed to unintentional poisoning is higher among men. The largest gender inequity is evident in Viet Nam, where men are 10 times more likely than women to die from unintentional poisoning (Fig. 8). There are exceptions to the pattern of gender inequity. In Australia, men and women are equally likely to die from unintended poisoning, while in China women are at 30% increased risk (Fig. 8).

An estimated 200 000 people die by suicide each year in the Western Pacific Region, accounting for 25% of global suicides. Suicide poses a particular burden in younger age groups, being a leading cause of death among those aged 15 to 59 years in the Region. Gender disparities are less pronounced in the Western Pacific Region compared to the global average – the crude suicide rate shows that men in the Region are at a 16% increased risk, compared to a 75% increased risk globally – although sex patterns in suicide differ between countries and by age.

While a higher suicide rate is evident among men across all age brackets in most countries, gender differences tend to be least pronounced in the youngest age brackets (Table 1). The largest gender disparity is apparent in Mongolia, where the suicide rate among men aged 30 to 39 years is more than 10 times greater than among women of the same age. The crude suicide rate increases with age among both men and women

FIG. 7 Road traffic crashes, age-standardized death rates per 100 000 population, aged 15 years and over, by sex, selected countries in the Western Pacific Region, 2012



Source: Global Information System on Alcohol and Health, by Country and by Region, 2000-2016 data in: World Health Organization Global Health Observatory Data Repository (http://apps.who.int/gho/data, accessed Jul. 2018).

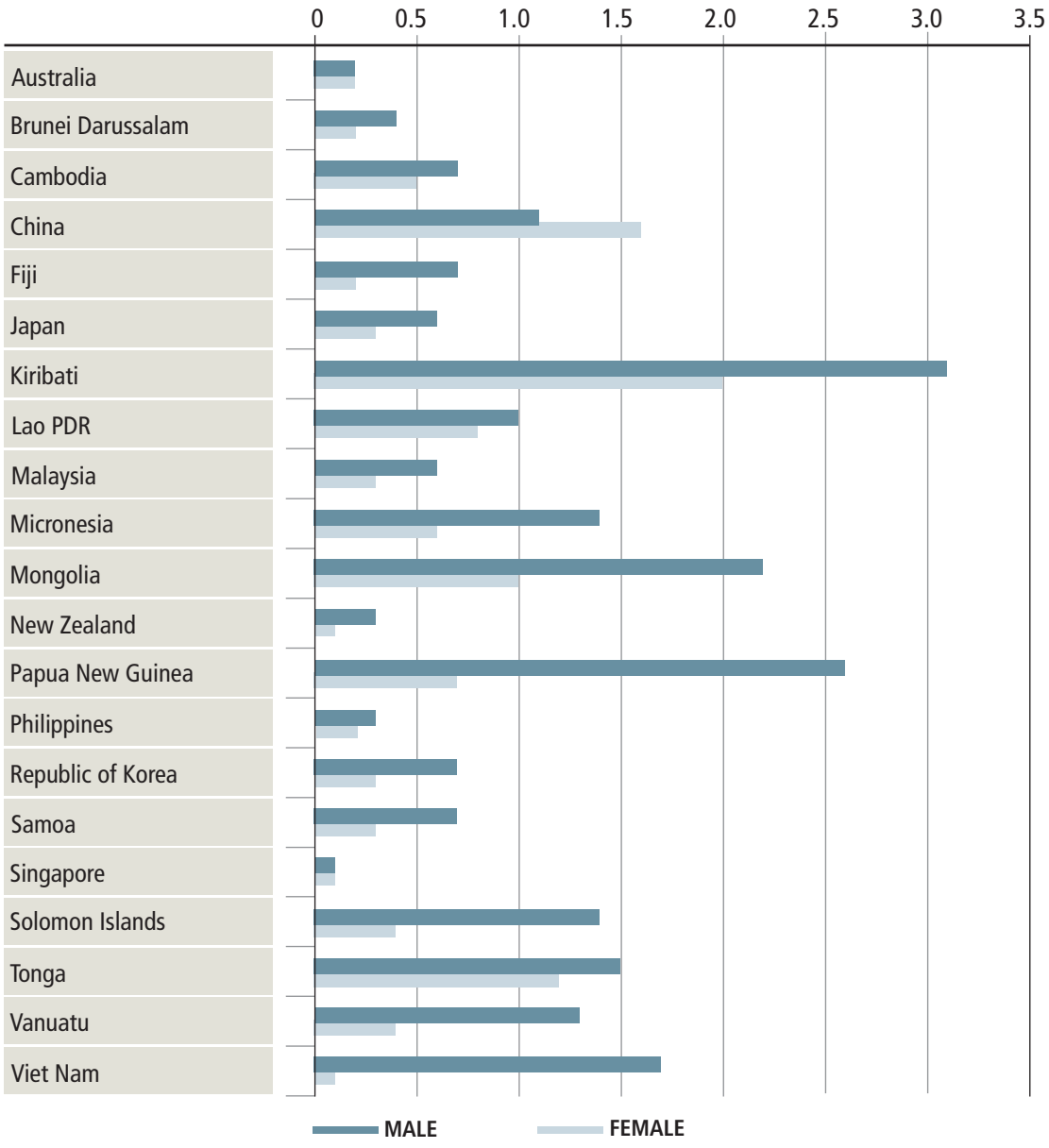
in all countries. The highest rate of suicide mortality in the Region is among men aged 80 and over in the Republic of Korea, with a rate of 155 per 100 000 population.

Contrasting with the regional pattern, suicide mortality is higher among women in younger age brackets in China and only from the age of 60 does the rate among men begin to exceed that of women. China presents the lowest gender inequities across all age brackets, with the difference between men and women not exceeding 40% at any age.

The Western Pacific Region has the lowest rate of homicide of any WHO region. With 26% of the world's population, the Western Pacific Region had only 7.6% of the world's homicides in 2012 *(6)*. Prominent subregional variations are evident however, with the risk of homicide more than twice as high in the Region's lower-middle-and upper-middle-income countries compared to the Region's high-income countries (Fig. 9).

Across the Region, men are disproportionately more likely to be a victim of homicide than women. The Philippines – with the highest rate of homicide in the Region – also presents the largest gender disparity, with a rate of homicide more than eight times greater among men than women in 2016 (Fig. 10). There has been some progress towards reducing the rate of male homicide in the Philippines, from 35.2 per 100 000 in 2005 to 26.3 per 100 000 in 2016 (Fig. 10).

FIG. 8 Mortality rate per 100 000 population attributed to unintentional poisoning, by sex, selected countries in the Western Pacific Region, 2016



Source: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Aug. 2018).

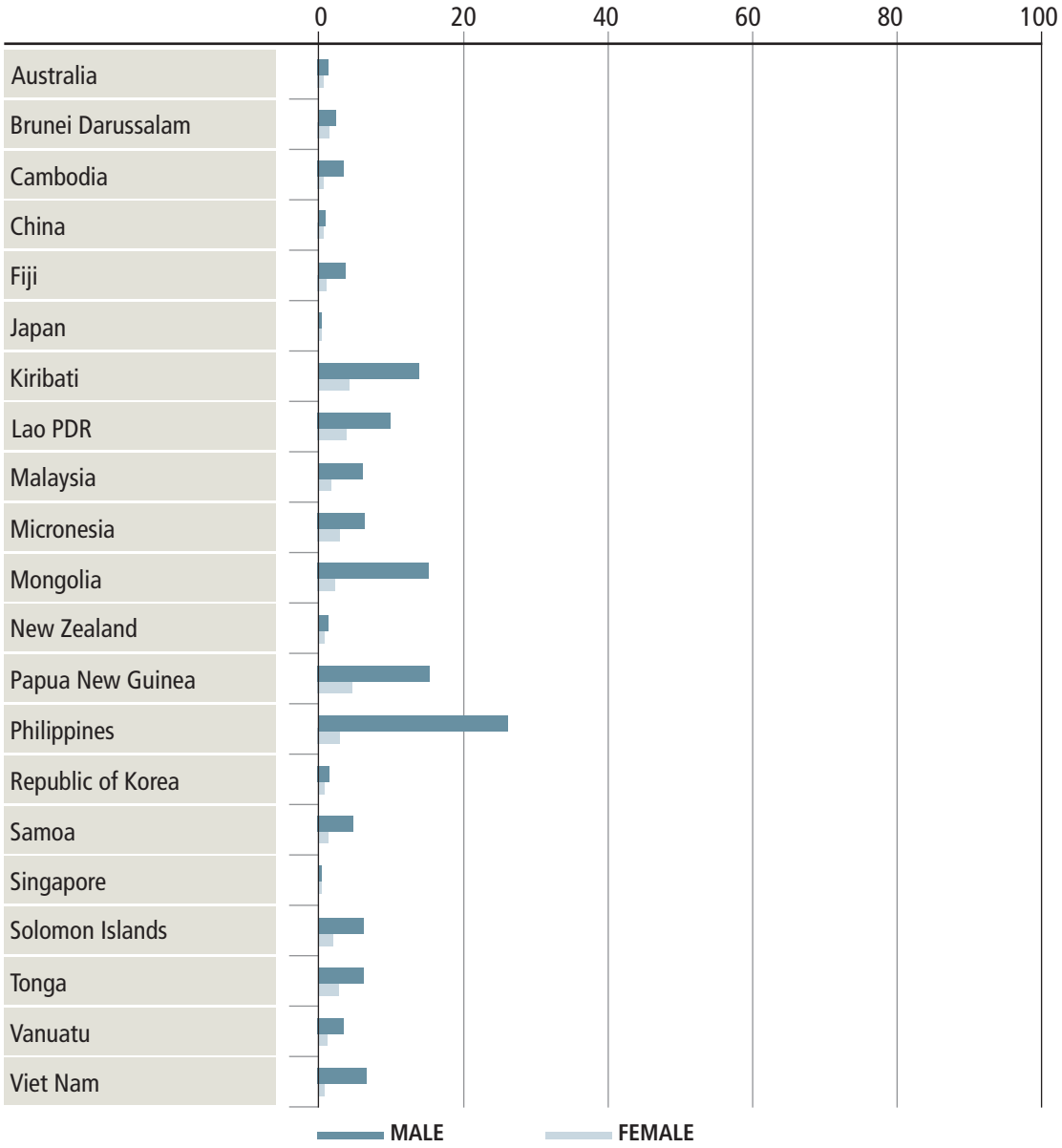
Table 1. Suicide rate, by age and sex, selected countries in the Western Pacific Region, 2016

COUNTRY	Age group							
	10–19	20–29	30–39	40–49	50–59	60–69	70–79	> 80
Australia								
MALE	7.3	20.7	24.7	30.2	27.5	19.8	19.8	41.2
FEMALE	3.9	6.8	8	9.4	9	6.2	6.7	20.1
Brunei Darussalam								
MALE	0.7	8	8.6	11.3	8.6	9.1	11.4	13.6
FEMALE	0.4	3.2	1.9	4.1	5.7	5.6	8.4	8.1
China								
MALE	1.5	4.4	4.7	4.8	9	24.2	51.2	73.2
FEMALE	2.3	5.7	7.4	7.8	12.1	22.6	37.1	52.3
Fiji								
MALE	0.9	13.6	13.2	10.9	4.3	6.1	18	111.2
FEMALE	1.5	5.2	1.5	1.7	2.2	4.5	11.3	0
Japan								
MALE	6.6	27.1	26.8	29.8	34.5	28.9	35.5	42.6
FEMALE	3	9.6	10	11.3	13.1	12.9	17.5	19.7
Kiribati								
MALE	24.2	57.4	30.2	19.7	17.6	23.5	30.5	71
FEMALE	7.3	9	4.5	3.4	4.2	7.2	11.3	21.6
New Zealand								
MALE	14.2	27.1	21.6	27.3	20.8	12.7	16.5	24.4
FEMALE	8.1	8.7	7.5	6.5	8.9	3.8	2.2	19.7
Republic of Korea								
MALE	4.9	16.9	33.9	44.1	56.8	54.2	104.4	155.0
FEMALE	3.9	11.1	17.6	16.5	14.6	15.5	33.4	51.5

Note: Crude rate per 100 000 population.

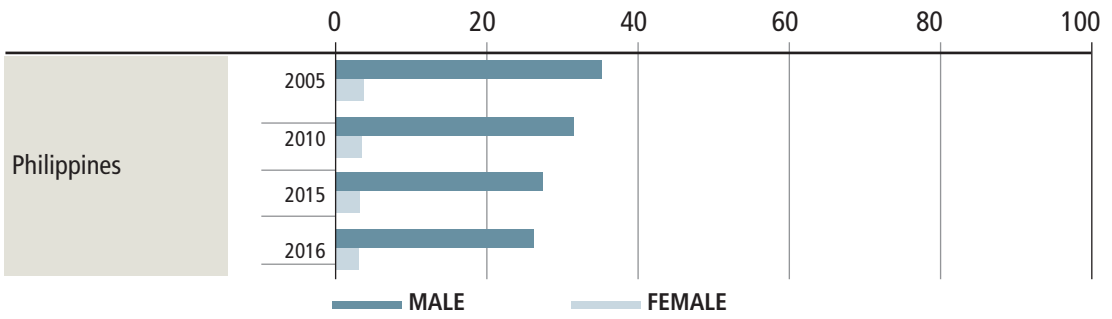
Source: Global Health Estimates 2016 data in: World Health Organization Global Health Observatory Data Repository (http://apps.who.int/gho/data, accessed Jul. 2018).

FIG. 9 Estimated homicide rate per 100 000 population, by sex, selected countries in the Western Pacific Region, 2016



Source: Global Health Estimates 2016: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016 data in: World Health Organization Global Health Observatory Data Repository (http://apps.who.int/gho/data, accessed Jul. 2018).

FIG. 10 Estimated homicide rate per 100 000 population, by sex, Philippines, 2005–2016

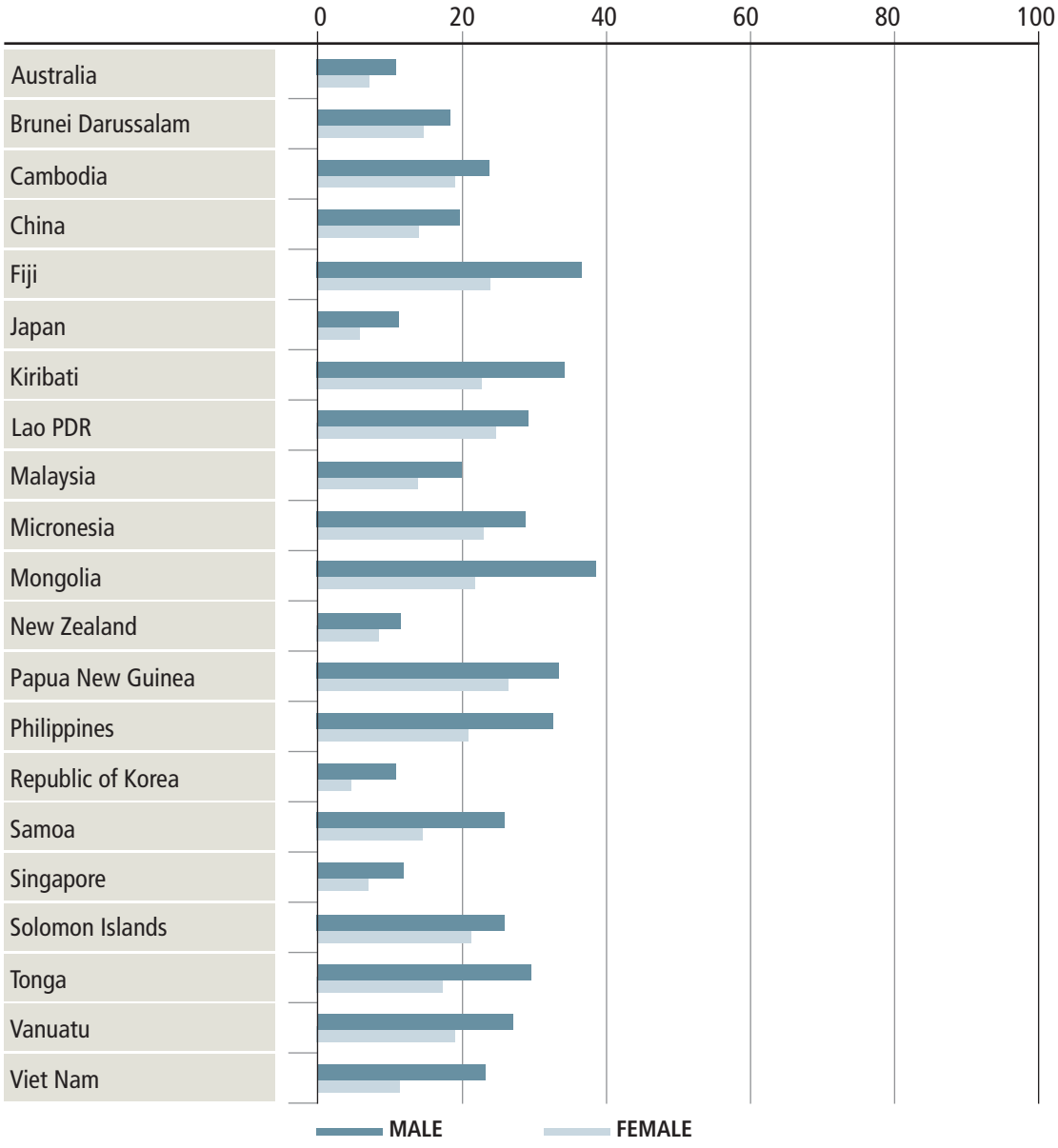


Source: Global Health Estimates 2016: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016 data in: World Health Organization Global Health Observatory Data Repository (http://apps.who.int/gho/data, accessed Jul. 2018).

Noncommunicable diseases

Noncommunicable diseases (NCDs) – principally cardiovascular diseases (CVD), cancer, diabetes and chronic respiratory diseases (CRD) – impose a major and growing burden on health and development in the Western Pacific Region. NCDs are the leading causes of death and disability in the Region, responsible for 80% of all deaths. Mortality attributed to the four target NCDs reveal gender inequities (Fig. 11), with men more likely to die prematurely from the target NCDs than women in all countries in the Region for

FIG. 11 Probability of dying from any of cardiovascular disease, cancer, diabetes or chronic respiratory disease between age 30 and exact age 70, by sex, selected countries in the Western Pacific Region, 2016 (in percentage)

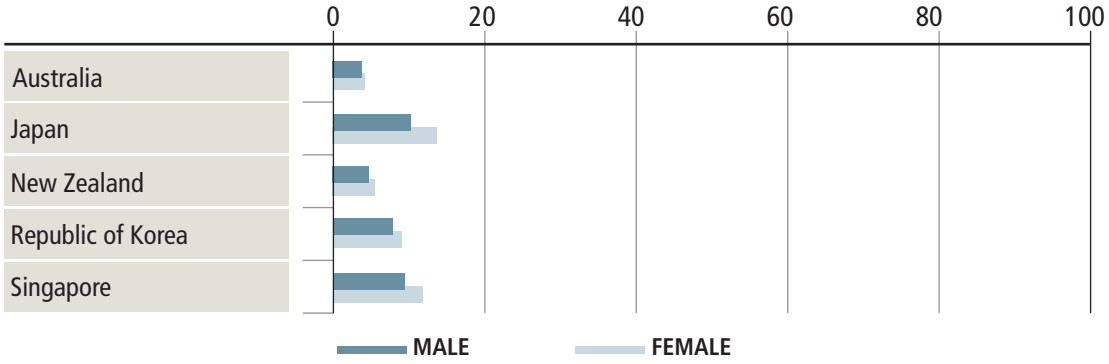


Source: Global Health Estimates 2016: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016 data in: World Health Organization Global Health Observatory Data Repository (http://apps.who.int/gho/data, accessed Jul. 2018).

which data are available. A more equitable mortality rate does not indicate a low national mortality rate. The increased risk of men dying from CVD, cancer, diabetes or CRD was lowest in Solomon Islands. However, the mortality rate in that country was among the highest in the Region among both men and women, at 26.1% and 21.4%, respectively.

Access to appropriate and effective diagnostic and therapeutic health care is important for reducing CVD-related mortality. Gender differences in 30-day mortality after hospitalization for acute myocardial infarction suggest that adverse outcomes may be more prevalent among women (Fig. 12). Without adjusting for age, these differences may be partially explained by differences in life expectancy between men and women. However, differentially effective diagnosis and management may also contribute to the disparity between women and men.

FIG. 12 Thirty-day mortality after admission to hospital for acute myocardial infarction, by sex, selected countries in the Western Pacific Region, 2014 (in percentage)



Note: Age-sex standardized rate per 100 patients – Rates based on unlinked data.

Source: OECD Health Care Quality Indicators Dataset. In OECD.Stat online data repository. OECD (https://stats.oecd.org/Index.aspx?DataSetCode=HEALTH_HCQI, accessed Aug. 2018).

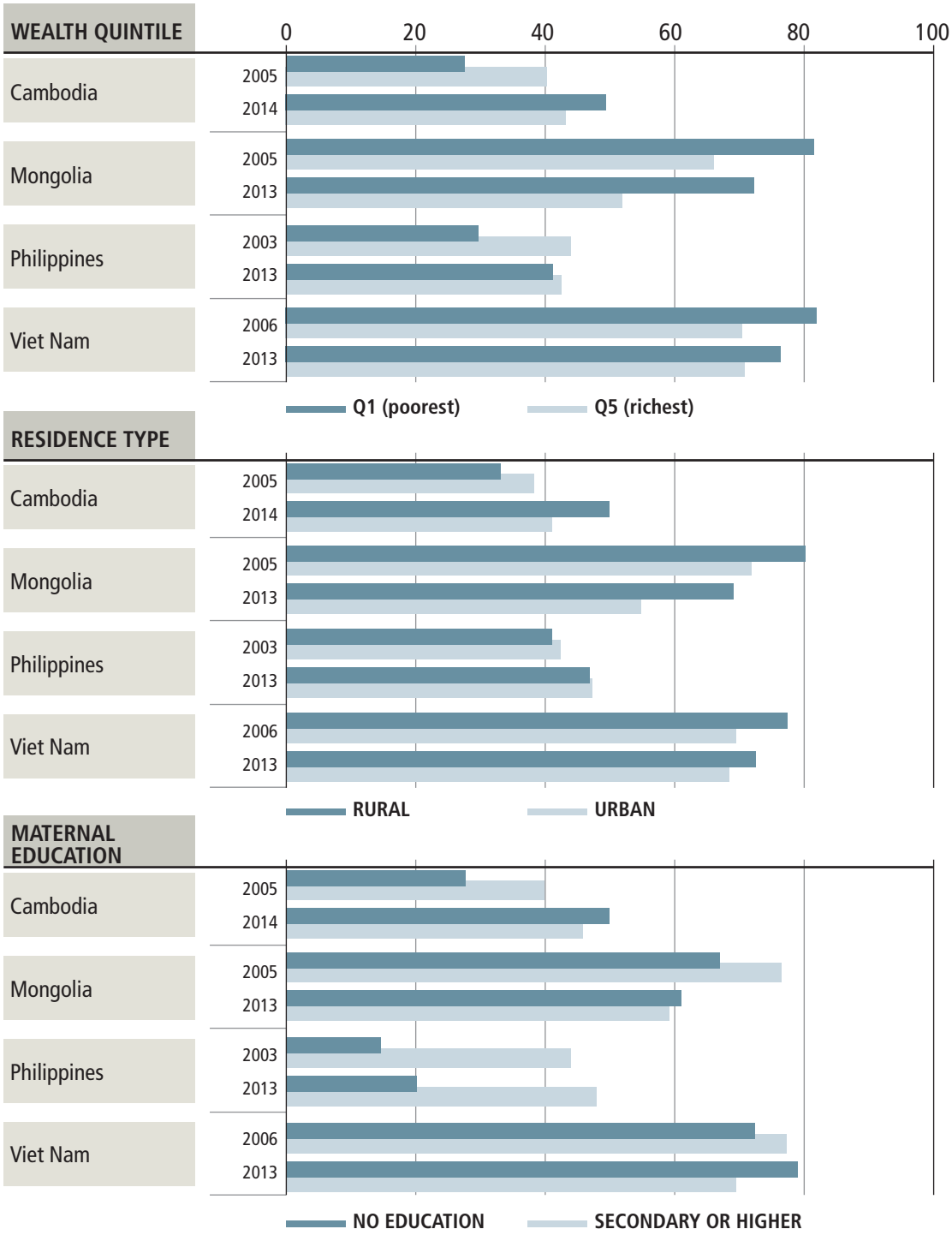
2 DIFFERENCES IN **ACCESS TO SERVICES**

Infancy, childhood and women's childbearing years are critical junctures for individuals' lifelong health and for thriving populations *(7)*. Advancing reproductive, maternal, newborn and child health (RMNCH) are important targets in their own right, and are also a proxy for broader sociocultural gender inequities. There are relatively good data to explore RMNCH inequities for some countries in the Western Pacific Region, predominantly sourced from Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS).

Reproductive health

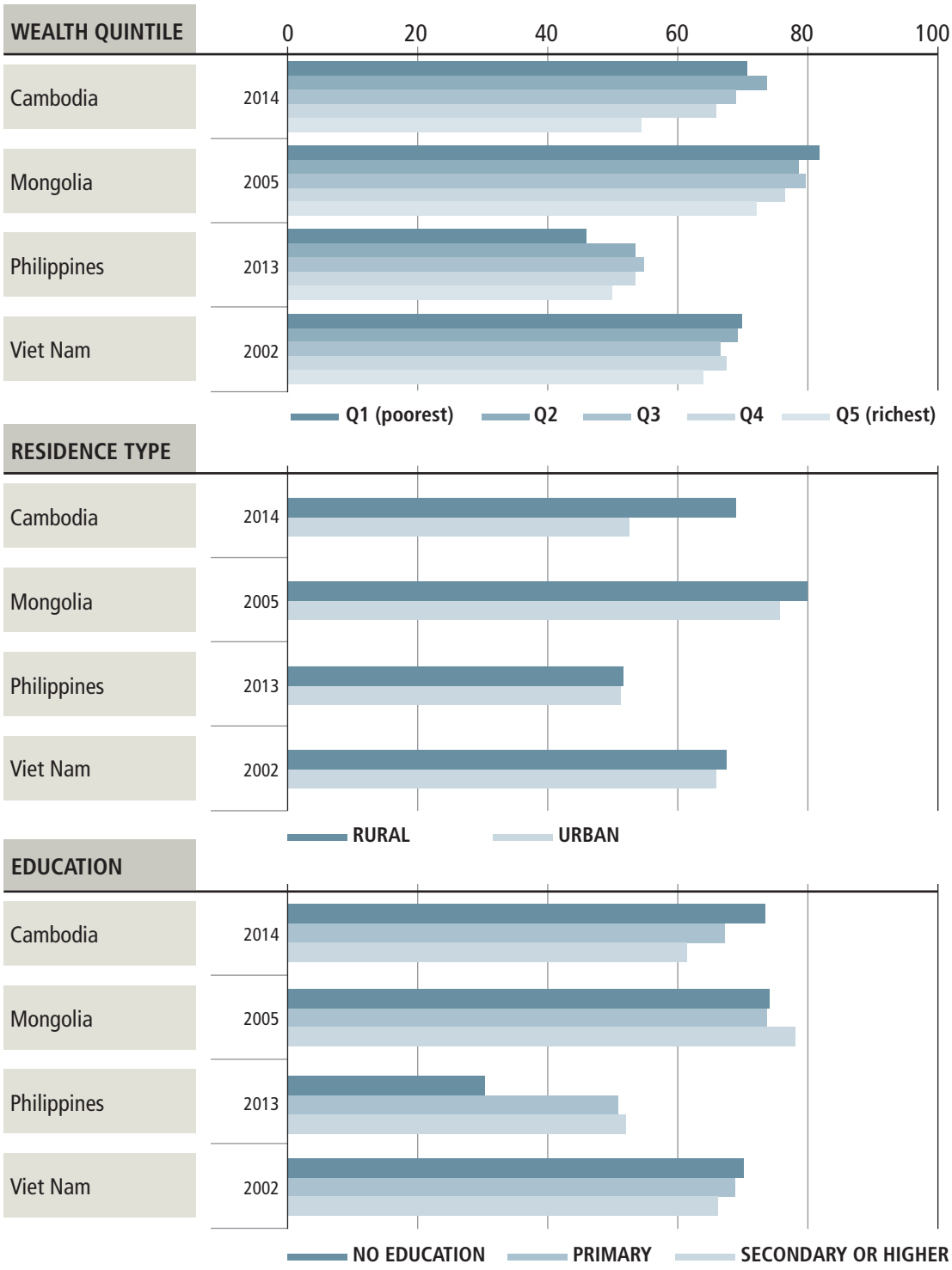
Universal access to reproductive health services is key for sustainable development. Women's access to modern contraceptive methods to satisfy their needs for family planning is important for reducing unintended pregnancies and associated health consequences, and has the potential to contribute to broader improvements in social and economic circumstances for women *(8)*.

FIG. 13 **Prevalence of use of modern methods of contraception among married or in-union women aged 15–49 years, by wealth quintile, residence and education, selected countries in the Western Pacific Region, 2005–2014 (in percentage)**



Source: Health Equity Monitor, data in: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Jul. 2018).

FIG. 14 **Demand for family planning satisfied by modern methods of contraception among married or in-union women aged 15–49 years, by wealth quintile, residence and education, selected countries in the Western Pacific Region, various years (in percentage)**



Source: Health Equity Monitor, data in: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Jul. 2018).

Overall, the prevalence of use of modern contraceptive methods has increased in recent years among women in the poorest wealth quintiles, those in rural areas and among women with no education (Fig. 13). Across the Region, there has been a concomitant stagnation, or in some countries a decrease, in the proportion of women in more advantaged groups using modern methods of contraception. For instance, in Cambodia the increase in modern contraceptive use between 2005 and 2014 was higher among those in the poorest quintile (17.5%) than in the richest quintile (2.3%) (Fig. 13).

In some countries, the extent to which demand for family planning is met using modern contraceptive methods differs according to social advantage (Fig. 14). In Cambodia, women in wealthy households and with higher levels of education are less likely to have their needs met for modern contraceptive methods than those in poorer households. In the Philippines, the reverse is true. Women in rural areas of Cambodia are more likely to have their demands for family planning met using a modern contraceptive method than those in urban areas. In Mongolia, the Philippines and Viet Nam, levels of unmet need are similar in urban and rural areas.

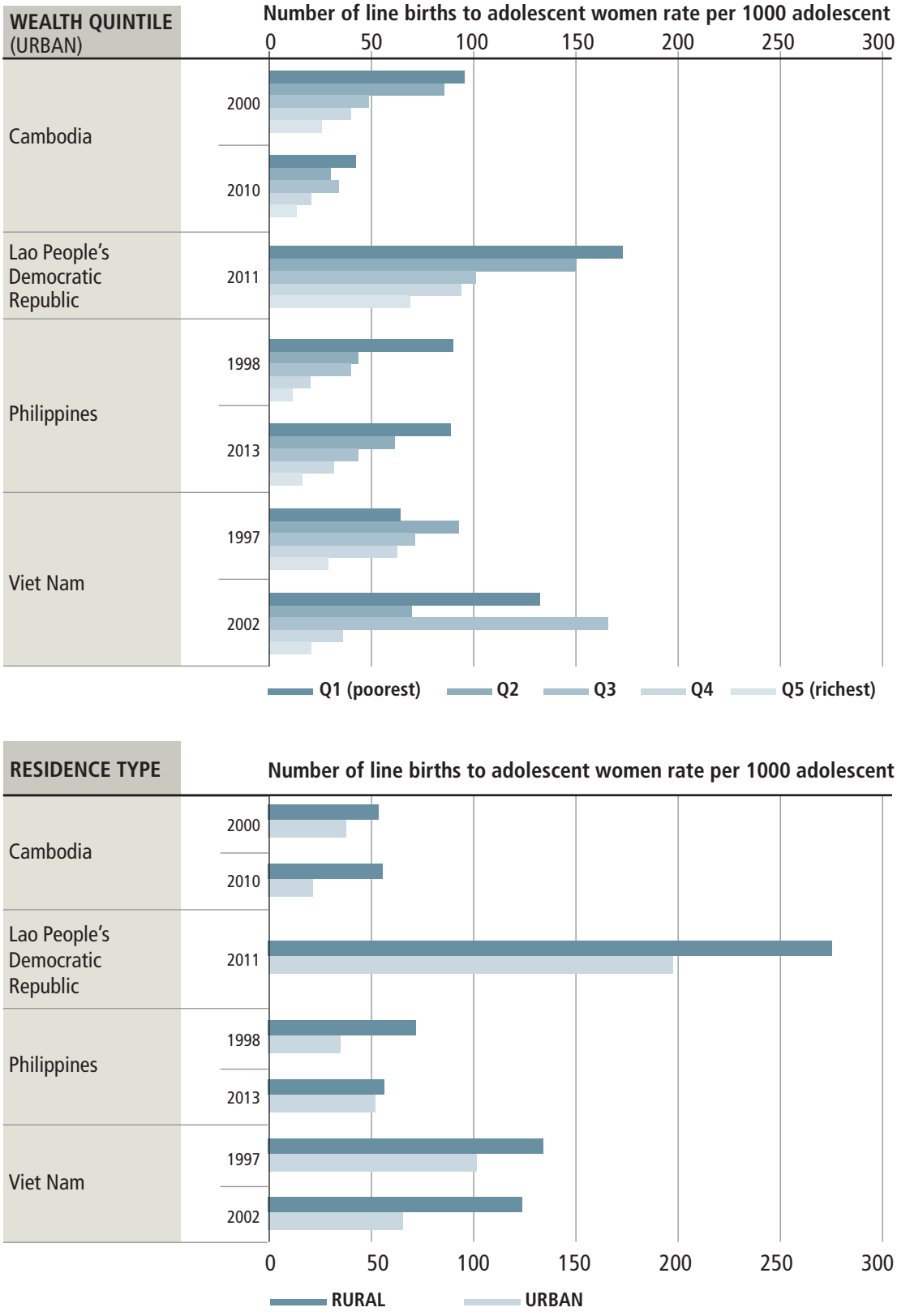
Maternal health

Each year thousands of women in the Western Pacific Region die for reasons related to pregnancy and childbirth *(9)*. Owing to a paucity of data on subnational distributions of maternal mortality in the Western Pacific Region, adolescent births, institutional deliveries and skilled birth attendance could be used as proxy measures to determine where to direct efforts to improve maternal mortality inequities.

The risk of dying from pregnancy-related causes is much higher for adolescents than for older women. In those countries for which data are available, the birth rate among women aged 15–19 years was highest among those living in the poorest households (Fig. 15). There was substantial variation across countries: in the Lao People's Democratic Republic, the birth rate among those in the poorest urban subgroup was 173 births per 1000 women, while in Cambodia the rate was 42.5 per 1000. Geographic inequities in adolescent births were evident in all countries for which disaggregated data are available (Fig. 15). Among adolescent women living in rural areas of the Lao People's Democratic Republic, the birth rate was 276 per 1000 women, 40% higher than in urban areas.

Progress towards improving urban wealth inequities in adolescent births has been inconsistent (Fig. 15). In Cambodia, there was faster improvement in the adolescent birth rate in the poorest subgroup compared with the richest between 2000 and 2010. In contrast, the Philippines has seen no improvement in wealth inequities in adoles-

FIG. 15 Adolescent birth rate aged 15–19 years, by wealth quintile (urban) and residence, selected countries in the Western Pacific Region, various years



Note: Historical data not available for the Lao People's Democratic Republic.

Source: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Aug. 2018).

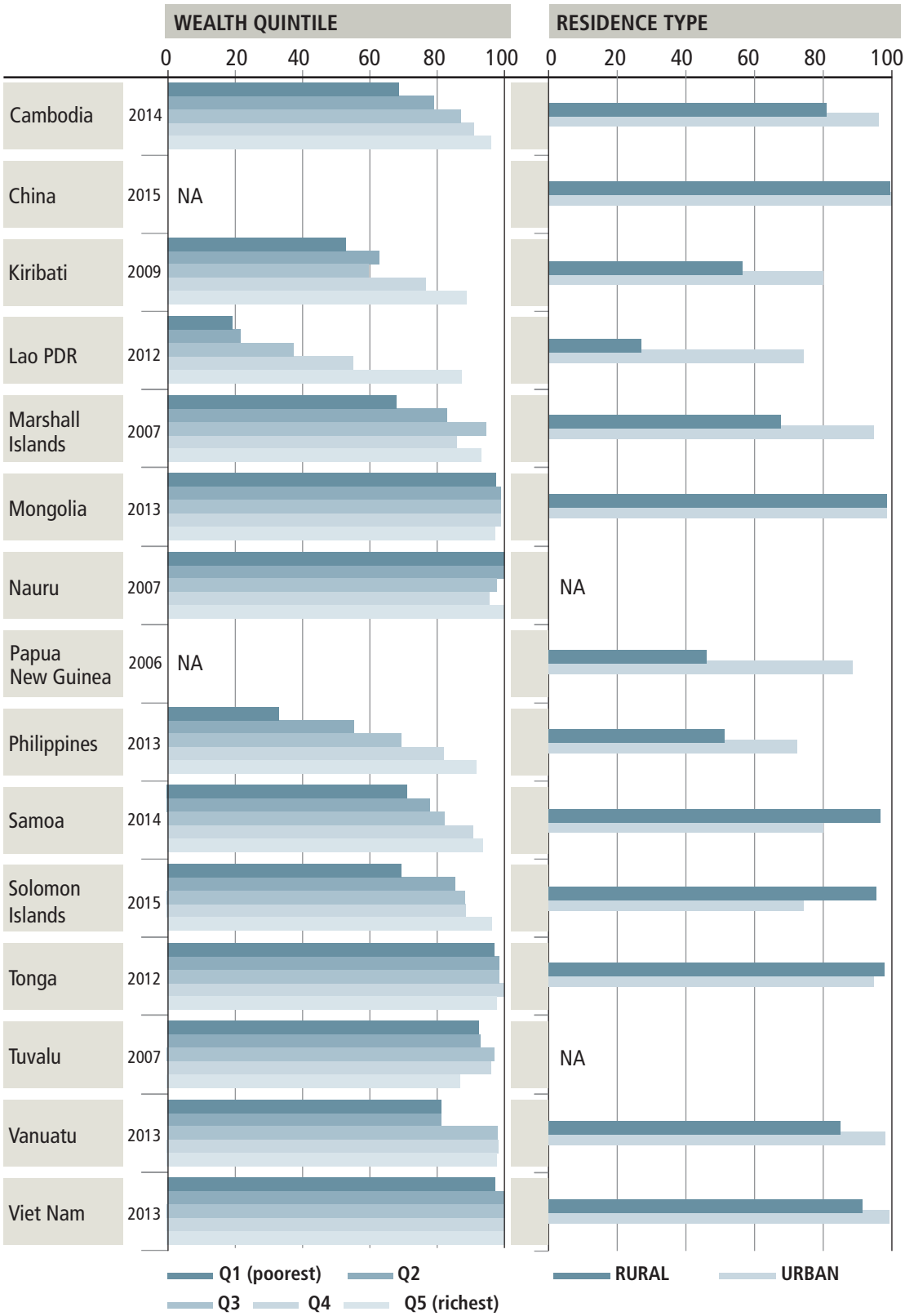
cent births in the 10 years to 2013. The Philippines and Viet Nam have seen modest improvements in geographic inequities in adolescent births. In Cambodia, there was no net reduction in the adolescent birth rate in rural areas. Coupled with a reduction in the urban adolescent birth rate, this has resulted in a widening gap between rural and urban areas in Cambodia.

Giving birth in a health facility and accompanied by skilled birth attendance are key strategies for reducing maternal mortality, and are target indicators for measuring progress towards improved maternal health *(10)*. In some countries, the proportion of deliveries in a health facility varies across geographical areas and according to household wealth. Fig. 16 illustrates the scale of within-country inequities and the cross-country variation within subgroups. Profound inequities are evident in the Lao People's Democratic Republic where women in the wealthiest households are four times more likely than those in the poorest households to deliver in a health facility. Geographically, women in urban areas of the Lao People's Democratic Republic are more than twice as likely to give birth in a health facility compared with those in rural areas. In contrast, the proportion of women giving birth in a health facility in Mongolia and Tonga is near-universal, regardless of geographical area or household wealth.

In China, the proportion of women who gave birth in a health facility has increased significantly at the national aggregate level in recent decades (Fig. 17). The pace of change in rural areas has been higher than in urban areas, resulting in an amelioration of historical geographic inequities in institutional births.

Provision of obstetric care by a skilled birth attendant (a doctor, nurse or midwife) can prevent many maternal and newborn deaths. With the exception of Mongolia, large social and geographic inequities exist in skilled birth attendance (Fig. 18). Poorer mothers, those with lower levels of education and those residing in rural areas are least likely to have received skilled care during childbirth. The Lao People's Democratic Republic presents the largest within-country inequities in skilled birth attendance when stratified by wealth quintile, area of residence and maternal education. In other countries inequities are patterned differently across stratifiers. For instance, in Viet Nam, maternal education is an important determinant of skilled birth attendance, whereas the impact of wealth on skilled birth attendance is only apparent for women in the poorest households with differences between rural and urban areas minimal.

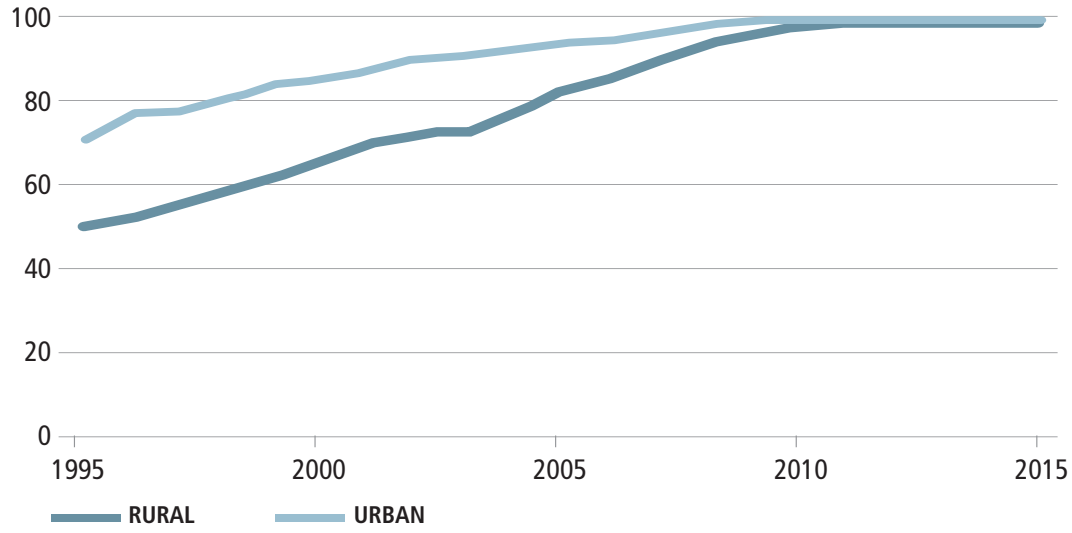
FIG. 16 **Percentage of births delivered in a health facility, by wealth quintile and residence, selected countries in the Western Pacific Region, various years**



Note: Indicator refers to women who had a live birth in a recent time period, generally 2 to 5 years.

Source: UNICEF Maternal and Newborn Health Database [online database]. UNICEF (https://data.unicef.org/topic/maternal-health/newborn-care/, accessed Aug. 2018).

FIG. 17 Percentage of births delivered in a health facility, by residence, China, 1985–2015



Note: Indicator refers to women who had a live birth in a recent time period, generally 2 to 5 years.

Source: UNICEF Maternal and Newborn Health Database [online database]. UNICEF (https://data.unicef.org/topic/maternal-health/newborn-care/, accessed Aug. 2018).

FIG. 18 Skilled birth attendance, by wealth quintile, residence and maternal education, selected countries in the Western Pacific Region, various years (in percentage)

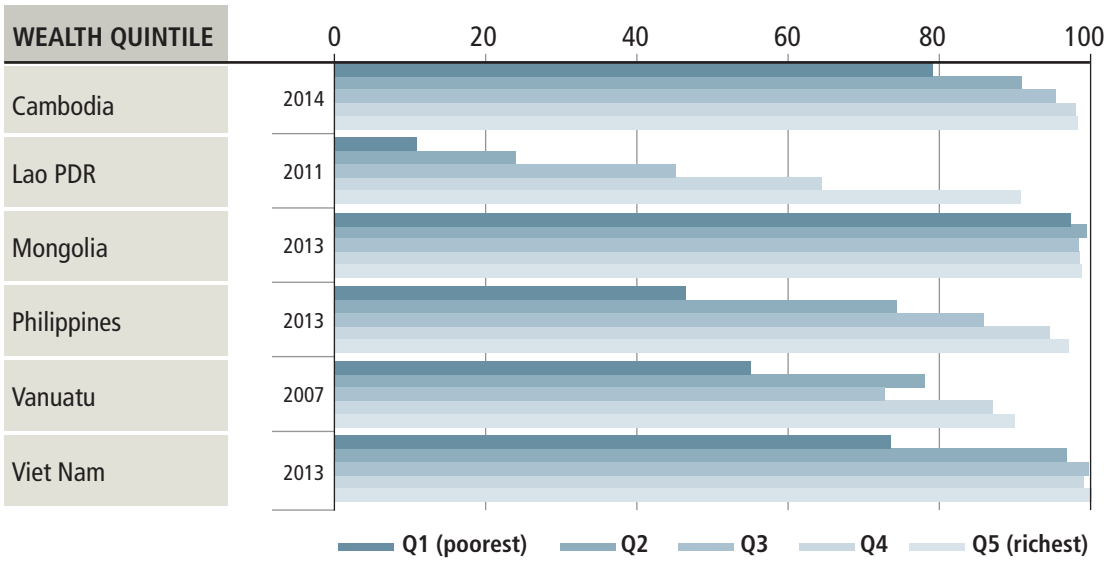
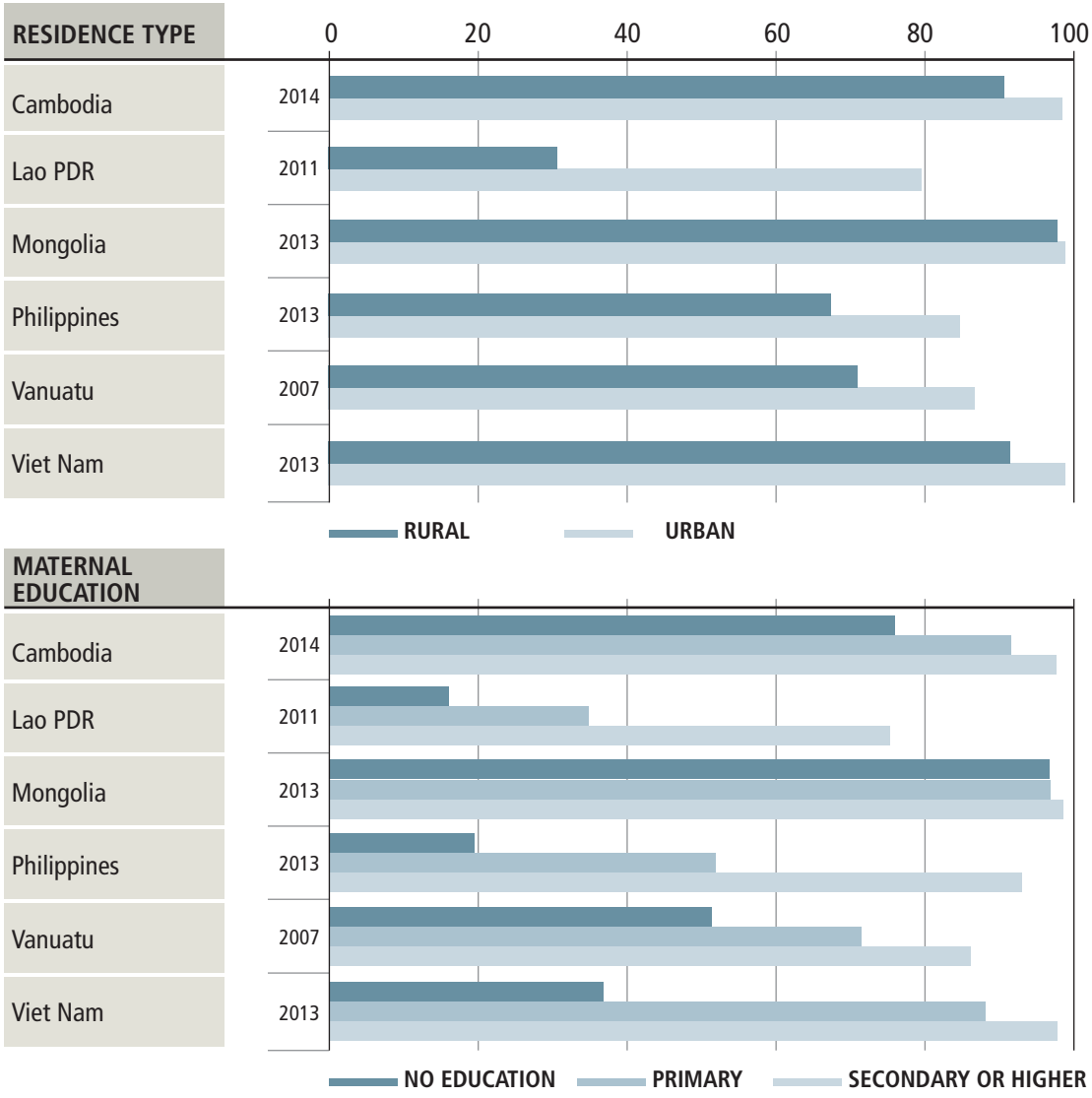


FIG. 18 Skilled birth attendance, by wealth quintile, residence and maternal education, selected countries in the Western Pacific Region, various years (in percentage) *(continued)*



Note: Skilled birth attendance in the two or three years preceding the survey.

Source: Health Equity Monitor, data in: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Jul. 2018).

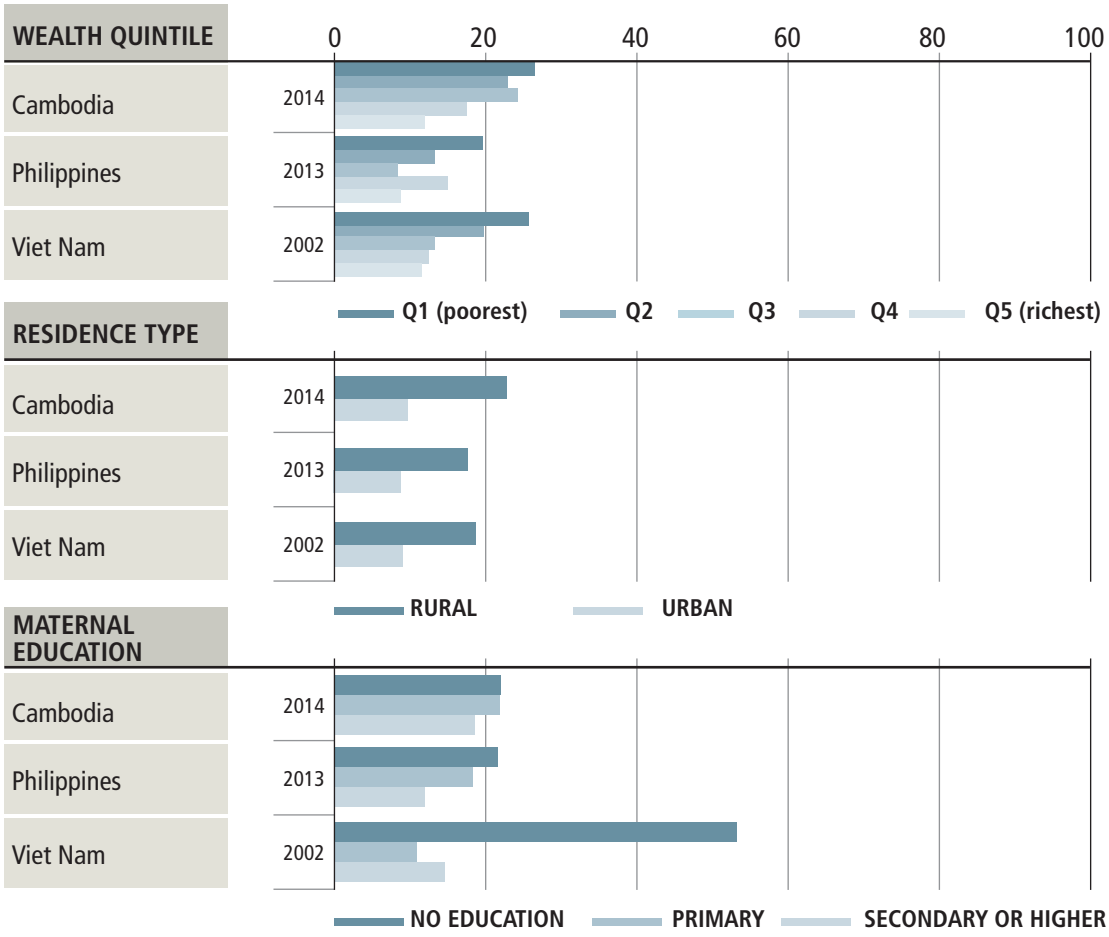
Newborn health

In 2016, 150 000 neonatal deaths occurred in the Western Pacific Region. This represents a reduction in the neonatal mortality rate from 26.8 deaths per 1000 live births in 1990 to 6.5 deaths per 1000 live births in 2016. In Cambodia, the Philippines and Viet Nam, infants born to the poorest families were more likely to die as newborns than those born to richer families, and babies born in these countries to mothers living in rural areas were more likely to die than those born to mothers living in urban areas (Fig. 19). In Viet Nam, low maternal education was an important determinant of neonatal mortality, whereas the impact of maternal education was less pronounced in other countries.

Progress towards improving gaps in neonatal mortality has been inconsistent (Fig. 20). In Cambodia, wealth and geographic inequities in neonatal mortality have decreased in recent years. In the Philippines, inequities have persisted, while the most recent data for Viet Nam show that inequities in neonatal mortality have widened.

Babies born too small – that is, weighing less than 2500 grams – are at elevated risk of death in the neonatal period and for other short- and long-term consequences. While striking within-country social inequities in low birthweight have been documented globally *(11),* data describing subnational distributions of low birthweight in the Western Pacific Region are limited. The available data show that, in the Lao People's Democratic Republic, more babies born in urban areas weighed less than 2500 grams than those born in rural areas (Fig. 21). In Mongolia, geographic inequities are reversed; however, the proportion of babies born at low birthweight is markedly lower nationally (Fig. 21).

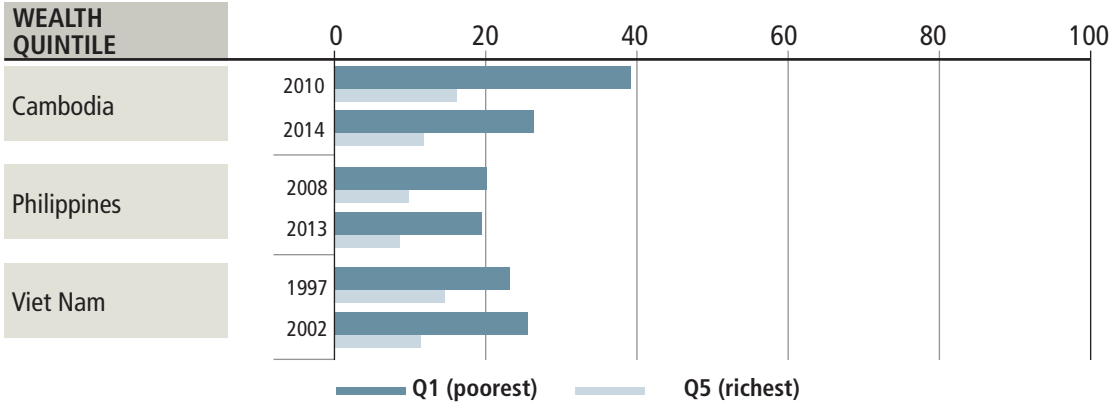
FIG. 19 Neonatal mortality rate (per 1000 live births), by wealth quintile, residence and maternal education, selected countries in the Western Pacific Region, various years (in percentage)



Note: Probability of dying in the first month of life in the preceding 10 years.

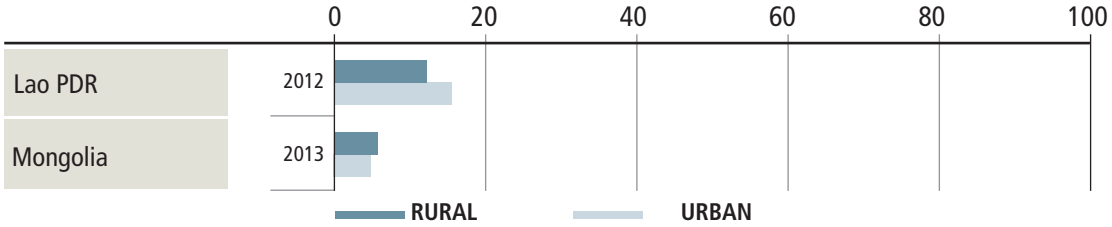
Source: Health Equity Monitor, data in: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Jul. 2018).

FIG. 20 Neonatal mortality rate (per 1000 live births), by wealth quintile, selected countries in the Western Pacific Region, 1997–2014 (in percentage)



Source: Health Equity Monitor, data in: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Jul. 2018).

FIG. 21 Proportion of newborns with low birthweight, by residence, Lao People's Democratic Republic and Mongolia, various years

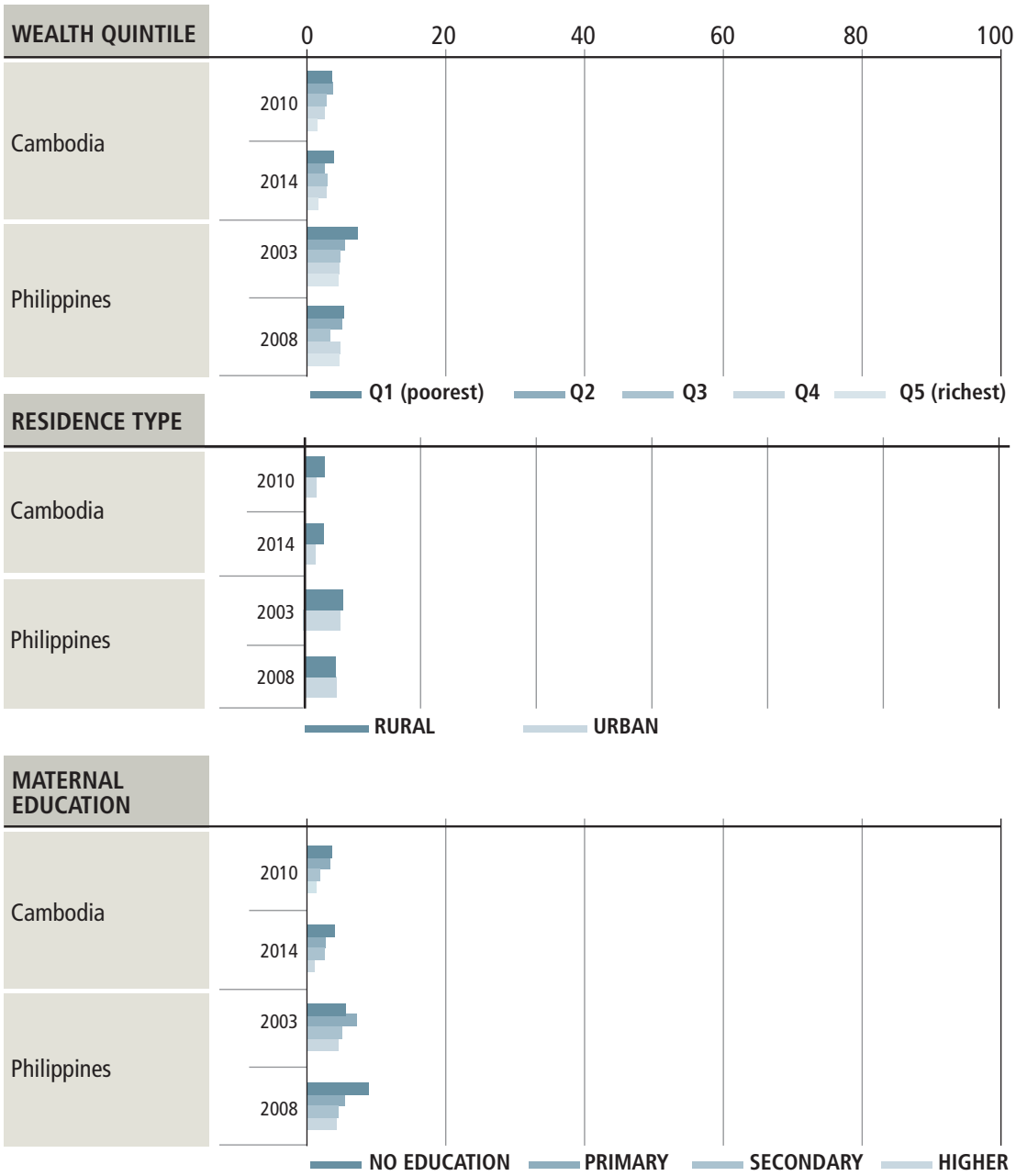


Source: WHO Western Pacific Region Health Information and Intelligence Platform (http://hiip.wpro.who.int/portal/Dataanalytics.aspx, accessed Aug. 2018).

Self-reported data from Cambodia and the Philippines show varying geographic inequities in the proportion of babies reported to be very small at birth (Fig. 22). In Cambodia, the gap between urban and rural areas has persisted in recent years. In rural areas of the Philippines, the proportion of babies born very small has decreased relative to urban areas, resulting in an amelioration of geographic inequities. Maternal education is increasingly an important determinant of low birthweight in the Philippines, and while inequities patterned according to maternal education were also apparent in Cambodia, the degree of inequity was less pronounced. In both Cambodia and the Philippines, wealth inequities have generally dropped in recent years.

Labour, birth and the immediate postnatal period are the most critical for newborn survival. The large majority of newborn deaths occur in babies born too early and too small, babies with infections, or babies asphyxiated around the time of delivery. Essential postnatal care for all newborns should be targeted around the time of birth in order to assess complications and initiate management. Wide variations were apparent in subnational distributions of postnatal checks across the Region (Fig. 23). In Mongolia, postnatal checks within the first two days after birth were nearly universal regardless of geographic area or household wealth. In Cambodia and the Philippines, minimal geographic and wealth inequities were evident; however, the proportion of babies receiving postnatal checks nationally was lower than in Mongolia (79% and 53%, respectively, compared with 99% in Mongolia). Cambodia has made substantial progress in ensuring universal access to postnatal care in recent years. Nationally, the proportion of babies receiving a postnatal check-up within the first two days after birth increased from 30% in 2010 to 79% in 2014 (Fig. 24). This was coupled with an increased rate of change in rural areas and in poorer households (Fig. 24).

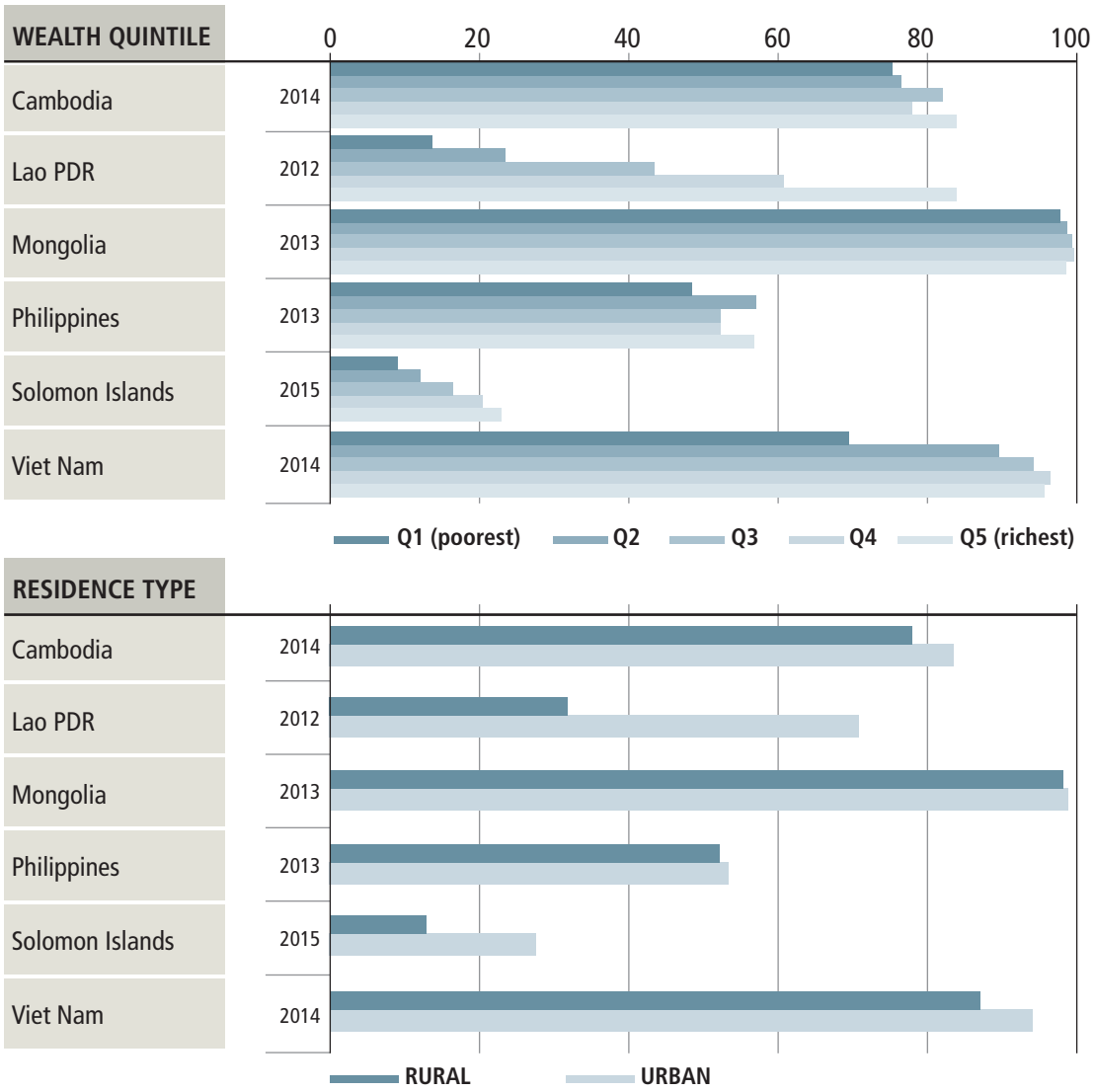
FIG. 22 **Proportion of newborns reported to be born very small, by wealth quintile, residence and maternal education, Cambodia and the Philippines, various years**



Note: Percentage of live births in the five years preceding the survey where the size of the child at birth was very small.

Source: The DHS Program [website]. United States Agency for International Development (http://dhsprogram.com, accessed Aug. 2018).

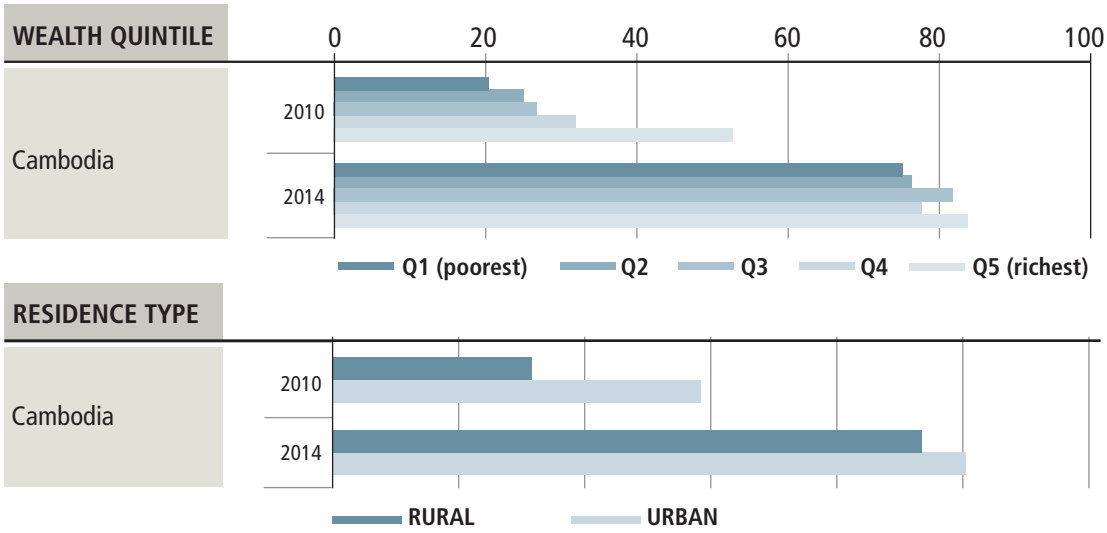
FIG. 23 Percentage of newborns who had a postnatal check-up within the first two days after birth, by wealth quintile and residence, selected countries in the Western Pacific Region, various years



Note: Percentage of last births in the two years preceding the survey who had their first postnatal check-up within the first two days after birth. Includes newborns who received a check-up from a doctor, midwife, nurse, feldsher or traditional birth attendant.

Source: UNICEF Maternal and Newborn Health Database [online database]. UNICEF (https://data.unicef.org/topic/maternal-health/newborn-care/, accessed Aug. 2018).

FIG. 24 **Percentage of newborns who had a postnatal check-up within the first two days after birth, by wealth quintile and residence, Cambodia, 2010 and 2014**



Note: Percentage of last births in the two years preceding the survey who had their first postnatal check-up within the first two days after birth. Includes newborns who received a check-up from a doctor, midwife, nurse, feldsher or traditional birth attendant.

Source: UNICEF Maternal and Newborn Health Database [online database]. UNICEF (https://data.unicef.org/topic/maternal-health/newborn-care/, accessed Aug. 2018).

Child health

Many child deaths could be averted through improved prevention and access to health care. However, children in the poorest and most socially disadvantaged households and those residing in rural areas tend to have lower health intervention coverage and worse health outcomes than children in more advantaged groups.

Immunization coverage is graded by social position in all countries for which data are available except Mongolia (Fig. 25). Children in poor households and whose mothers have no education are least likely to be fully immunized at one year of age (Fig. 25). In the Philippines, the impact of low maternal education on immunization coverage is particularly pronounced: children whose mothers have secondary or higher education are 49% more likely than those whose mothers have no education to be fully immunized at one year. When wealth quintile is used to stratify, those in the richest subgroup are 18% more likely to be fully immunized than children in the poorest subgroup.

Across the Region, geographic inequities in immunization coverage are less marked than social inequities (Fig. 25). The most pronounced difference is evident in Cambodia, where children living in rural areas are 15% less likely to be fully immunized at one year

than those in urban areas. Immunization coverage does not appear to be patterned according to gender. The gender difference in immunization coverage between boys and girls does not exceed 4% in any country.

Looking at changes over time, in the majority of countries there have been moderate improvements in the national aggregate levels of measles and DTP3 immunization coverage (Figs. 26, 27). With isolated exceptions, the pace of change has been equivalent across population subgroups in most countries, meaning that social and geographic inequities in immunization coverage remain.

FIG. 25 **Full immunization coverage among 1-year-olds, by wealth quintile, residence, maternal education and sex, selected countries in the Western Pacific Region, various years (in percentage)**

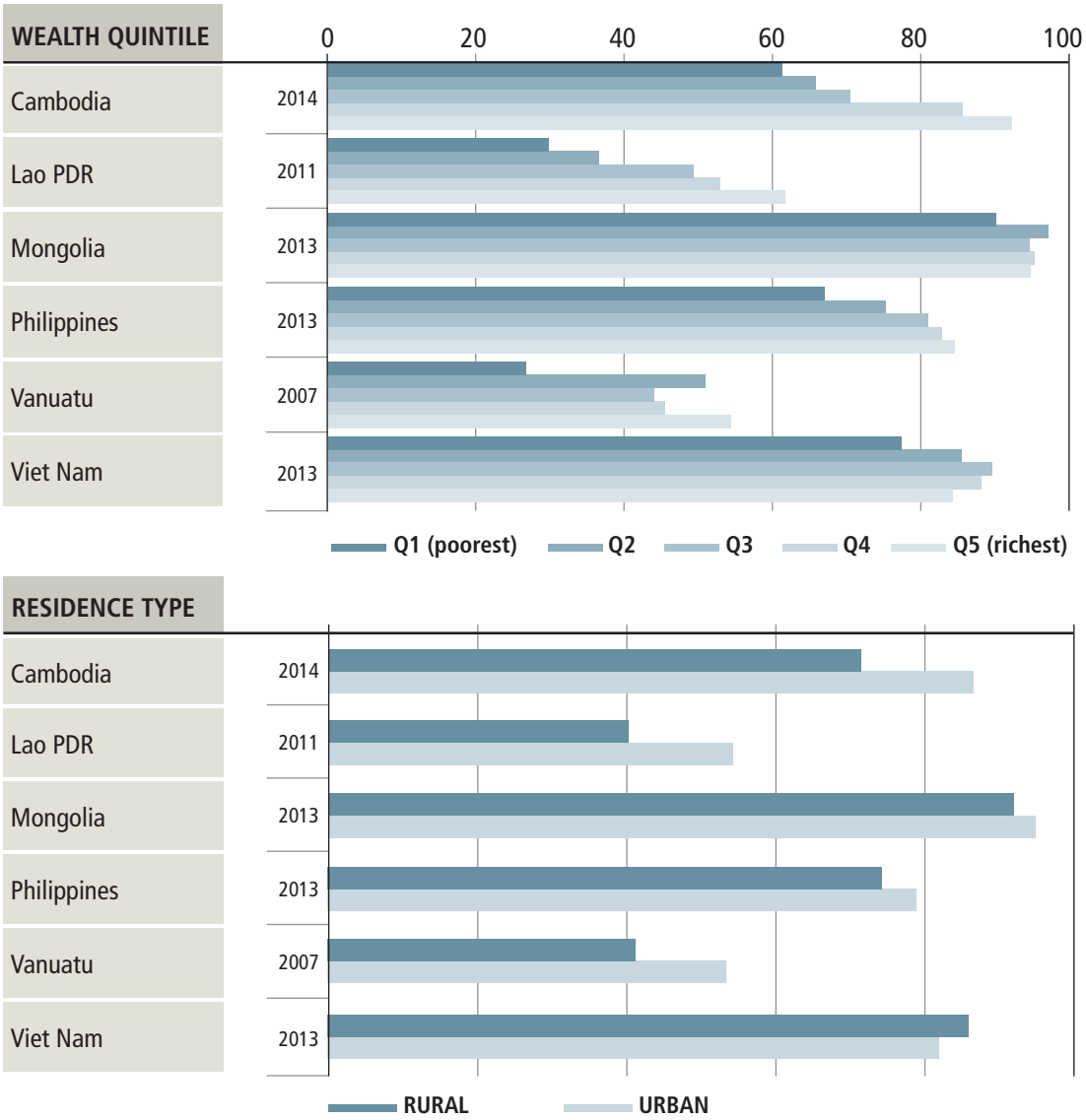
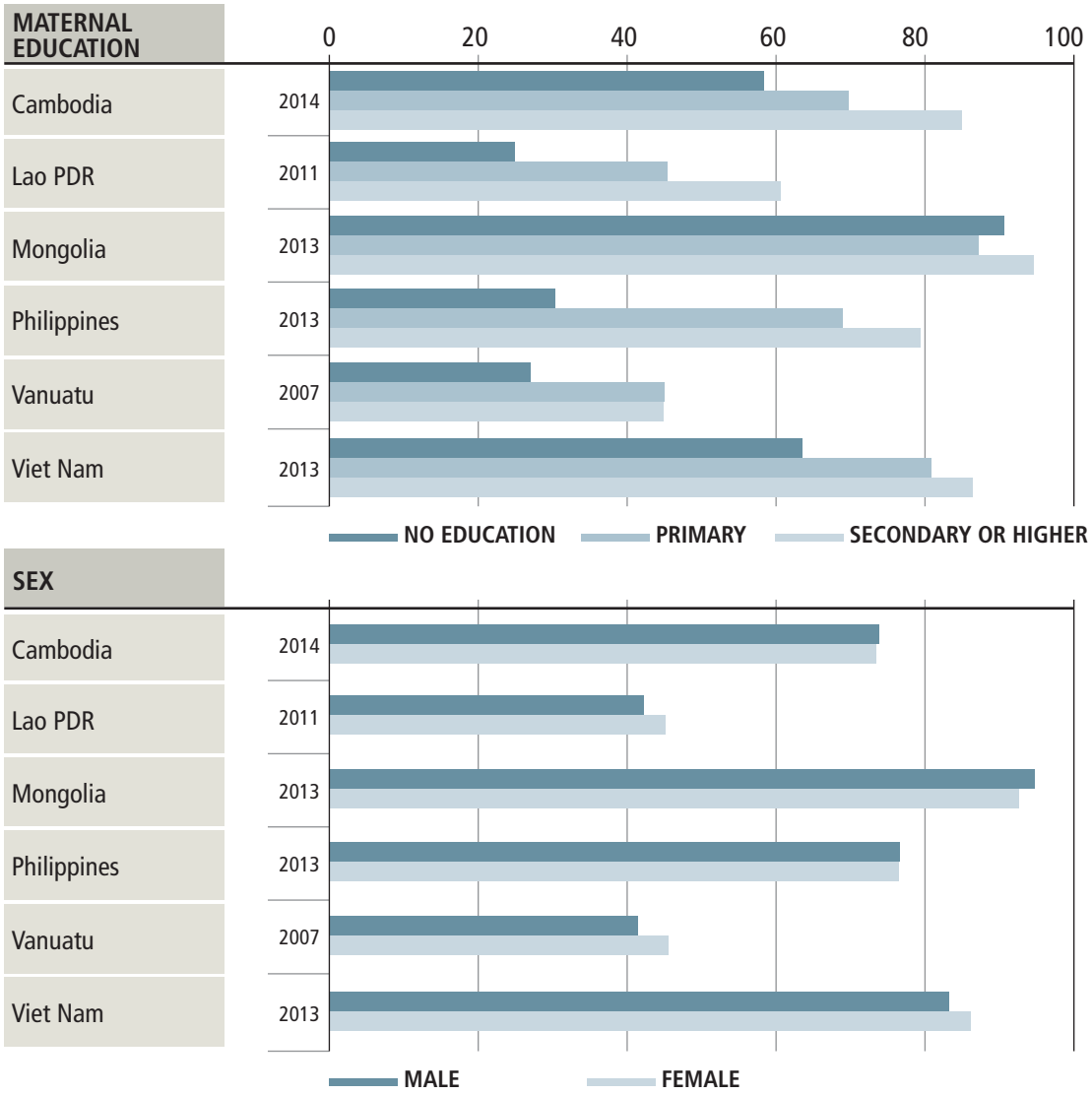


FIG. 25 Full immunization coverage among 1-year-olds, by wealth quintile, residence, maternal education and sex, selected countries in the Western Pacific Region, various years (in percentage) *(continued)*



Source: Health Equity Monitor, data in: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Jul. 2018).

FIG. 26 **Measles immunization coverage among 1-year-olds, by wealth quintile, residence, maternal education and sex, selected countries in the Western Pacific Region, 2006–2014 (in percentage)**

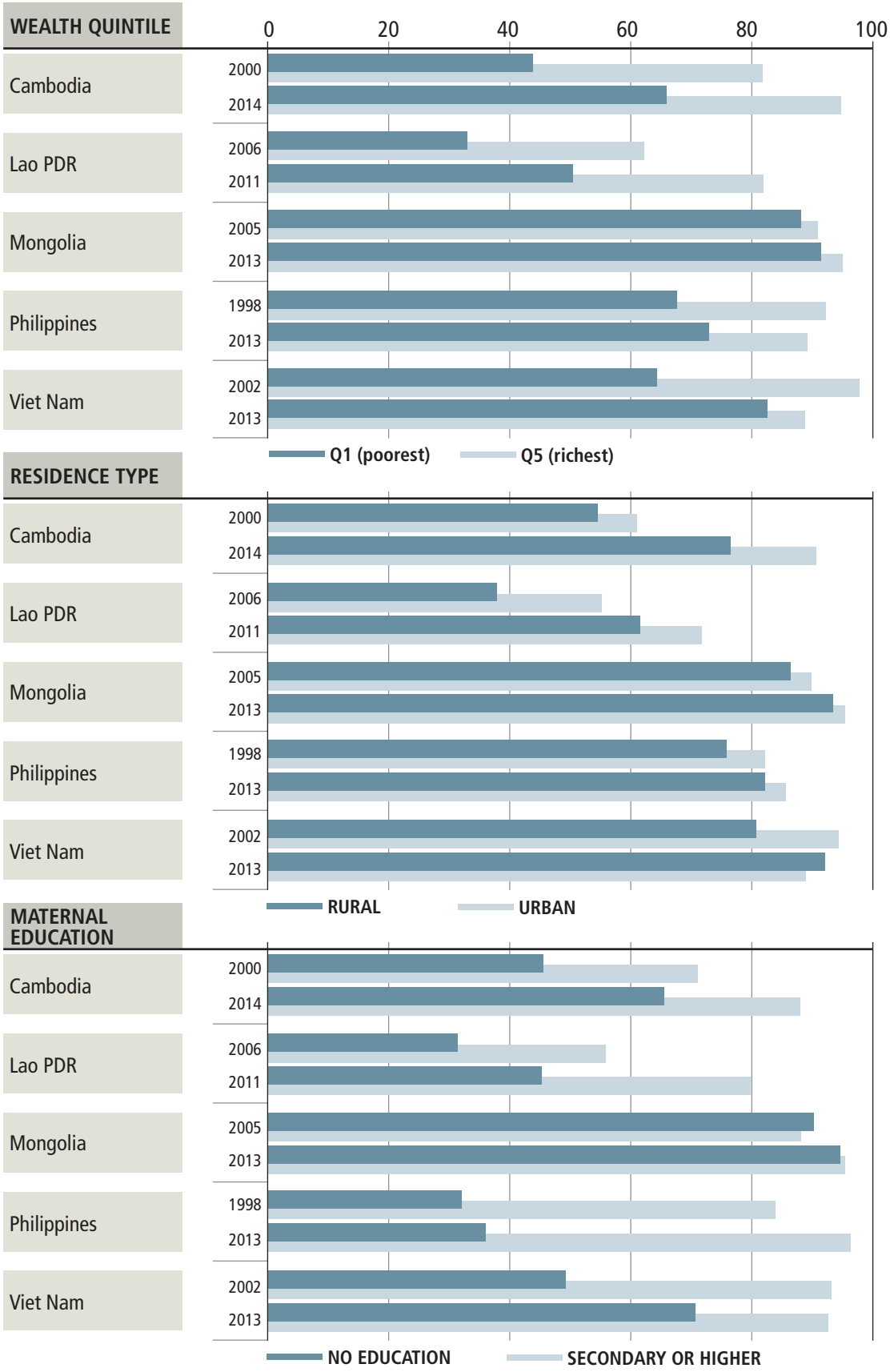
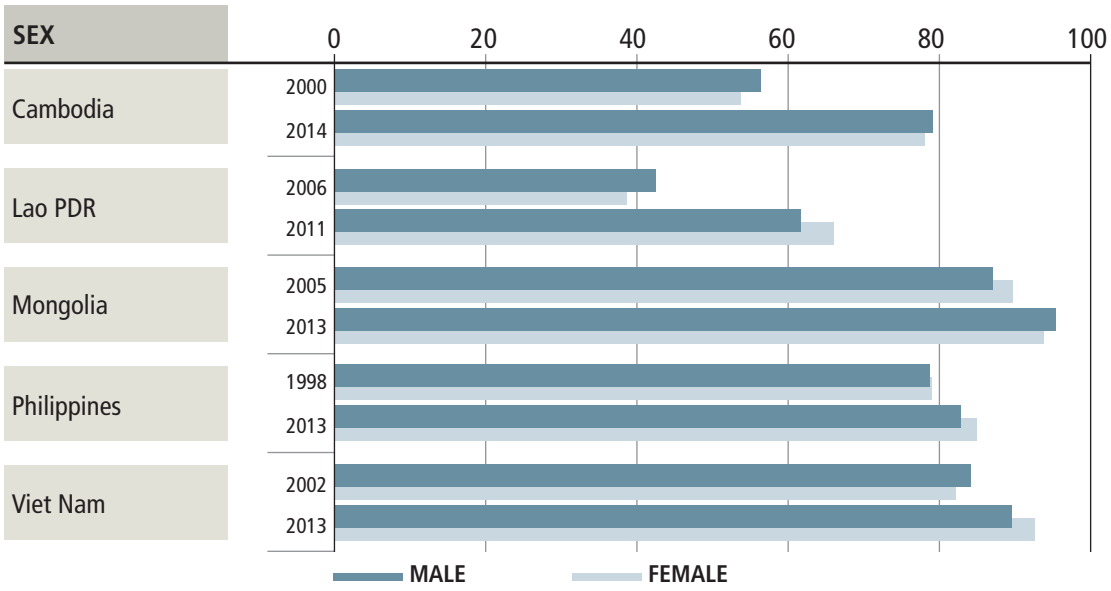


FIG. 26 Measles immunization coverage among 1-year-olds, by wealth quintile, residence, maternal education and sex, selected countries in the Western Pacific Region, 2006–2014 (in percentage) *(continued)*



Source: Health Equity Monitor, data in: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Jul. 2018).

FIG. 27 DTP3 immunization coverage among 1-year-olds, by wealth quintile, residence, maternal education and sex, selected countries in the Western Pacific Region, various years (in percentage)

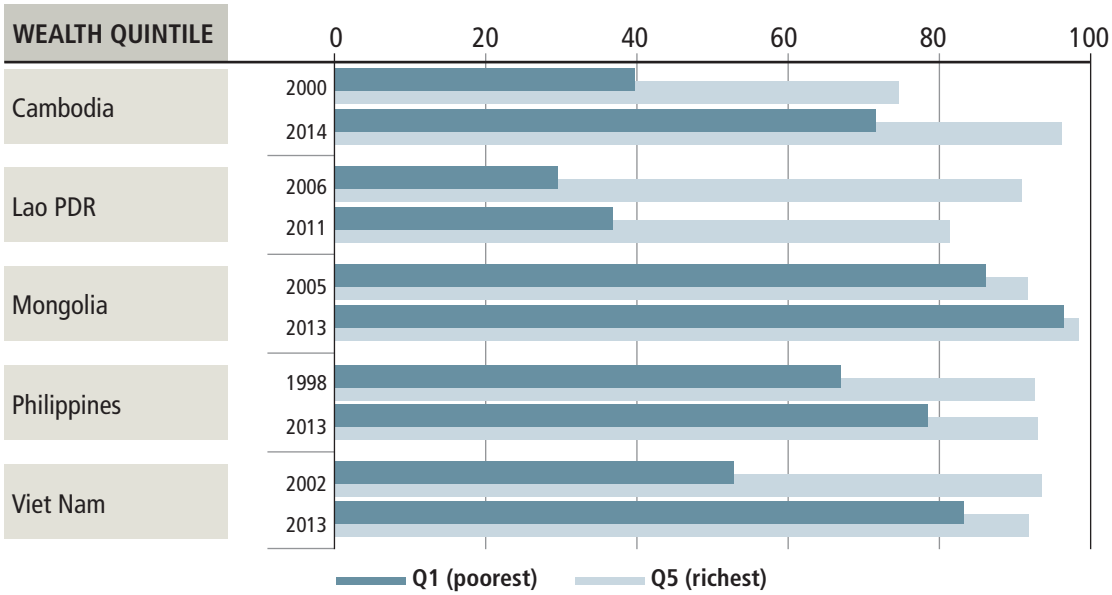
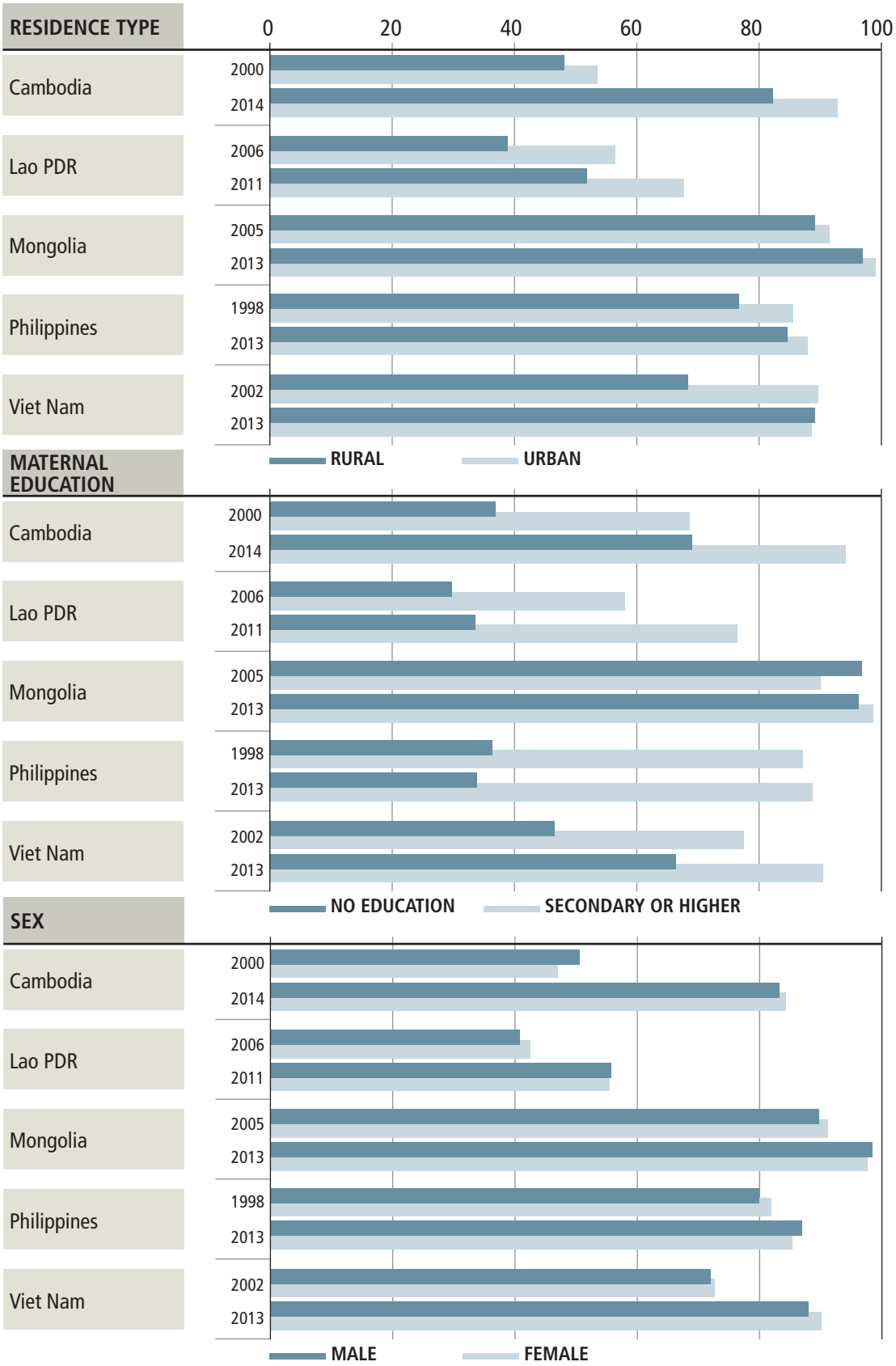


FIG. 27 DTP3 immunization coverage among 1-year-olds, by wealth quintile, residence, maternal education and sex, selected countries in the Western Pacific Region, various years (in percentage) *(continued)*



Source: Health Equity Monitor, data in: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Jul. 2018).

Pneumonia is a major cause of death in children under 5 years of age in the Region *(12)*. While early identification and prompt antibiotic treatment are effective, many children with suspected pneumonia do not attend a health facility. The most recent data show that with the exception of Cambodia, care-seeking for children with pneumonia symptoms differs profoundly between wealthy and poor households (Fig. 28). The largest inequity is apparent in the Lao People's Democratic Republic, where the level of care-seeking was 43.4% higher in rich families than in poor families. Wide rural–urban disparities are also apparent in the Lao People's Democratic Republic. In most countries, moderate gender inequity in care-seeking for children with suspected pneumonia was evident. In the Lao People's Democratic Republic, Mongolia, the Philippines and Viet Nam, the difference in care-seeking between boys and girls did not exceed 10%. In Cambodia, girls were 13.7% more likely than boys to be taken to a health facility for suspected pneumonia.

Comparing changes over time in care-seeking for children with pneumonia symptoms, Cambodia has ameliorated wealth inequities between 2005 and 2014 with pronounced gains in care-seeking among poorer families (Fig. 28). In contrast, wealth inequities persist in the Lao People's Democratic Republic, Mongolia and the Philippines, despite overall improvements in care-seeking (Fig. 28).

FIG. 28 Percentage of children under 5 years of age with suspected pneumonia who were taken to a health facility, by wealth quintile, residence and sex, selected countries in the Western Pacific Region, 2005–2014

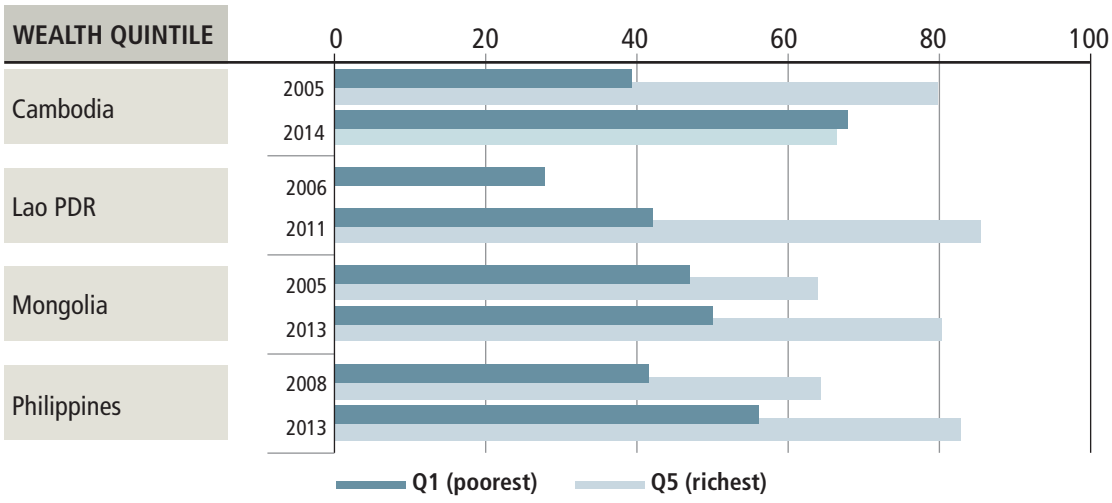
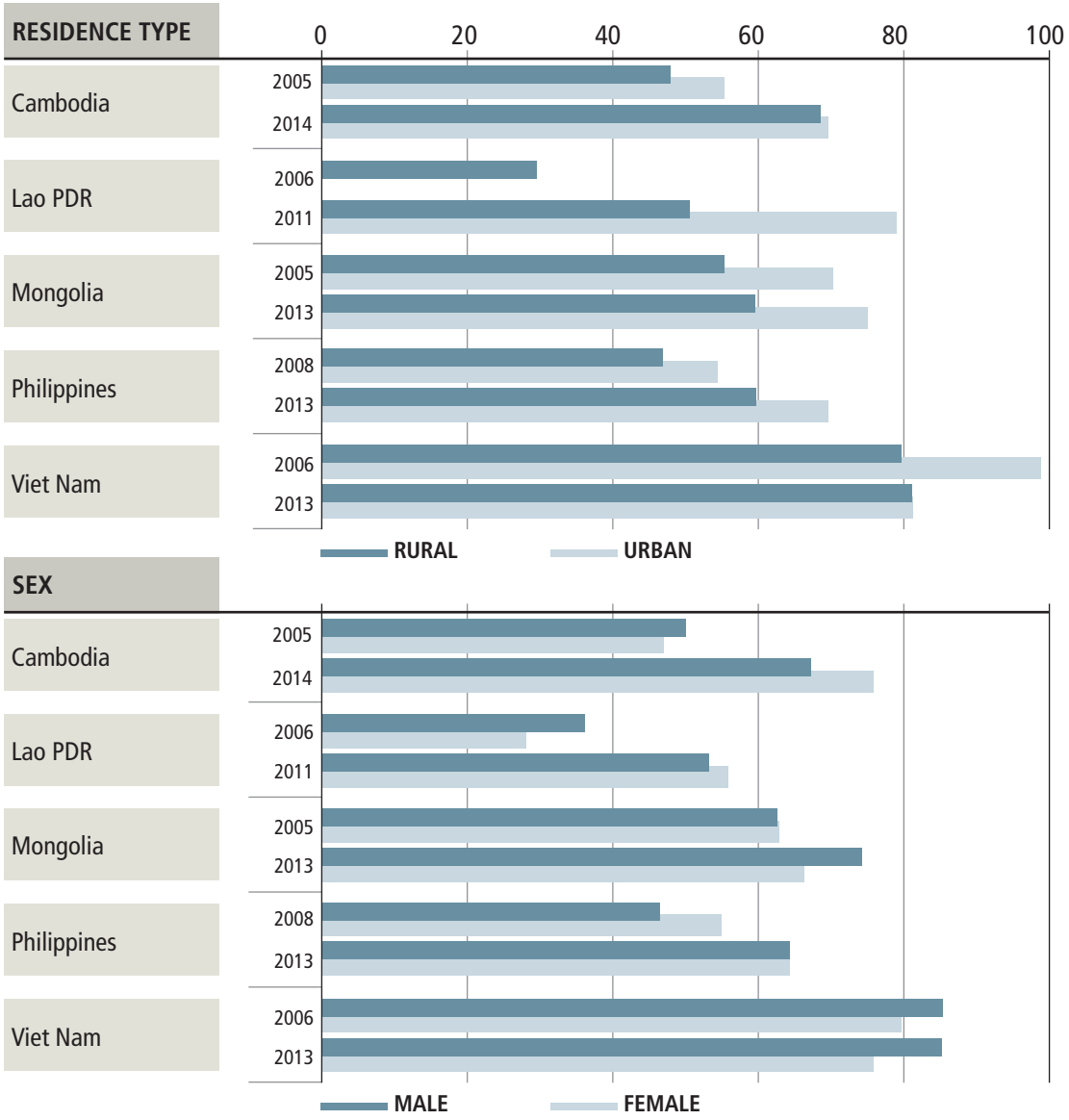


FIG. 28 Percentage of children under 5 years of age with suspected pneumonia who were taken to a health facility, by wealth quintile, residence and sex, selected countries in the Western Pacific Region, various years *(continued)*



Notes: Percentage of children aged 0–59 months with pneumonia symptoms in the two weeks prior to the survey who were taken to an appropriate health provider.

Estimate for the Lao People's Democratic Republic, Urban, 2006 not reported due to low cell count.

Source: Health Equity Monitor, data in: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Jul. 2018).

3 DIFFERENCES IN POPULATION **RISK FACTORS**

The prevalence of behavioural risk factors (such as physical inactivity, smoking and alcohol consumption) and biological risk conditions (such as overweight/obesity, high blood pressure, blood lipids and high blood glucose levels) differs across socio-demographic groups, with important implications for addressing the inequitable distribution of NCDs.

Malnutrition

Children who are malnourished may experience poor cognitive development and may miss out on critical windows for optimizing adult health and social outcomes. Effective action to eliminate child malnutrition should take into account the underlying causes of malnutrition, including social, economic and environmental determinants. Stunting (caused by long-term insufficient nutrient intake and/or frequent infections) and wasting

(caused by acute significant food shortage and/or disease) are both associated with food insecurity, and thereby broader sociopolitical determinants *(13)*.

As shown in Figs. 29 and 30, an incremental association between undernutrition and household wealth was apparent in countries across the Region, although the degree of economic inequity differed from country to country and according to the form of undernutrition (stunting or wasting). Patterns of inequity according to maternal educa-

FIG. 29 Stunting prevalence among children aged under 5 years of age, by wealth quintile, residence and maternal education, selected countries in the Western Pacific Region, various years (in percentage)

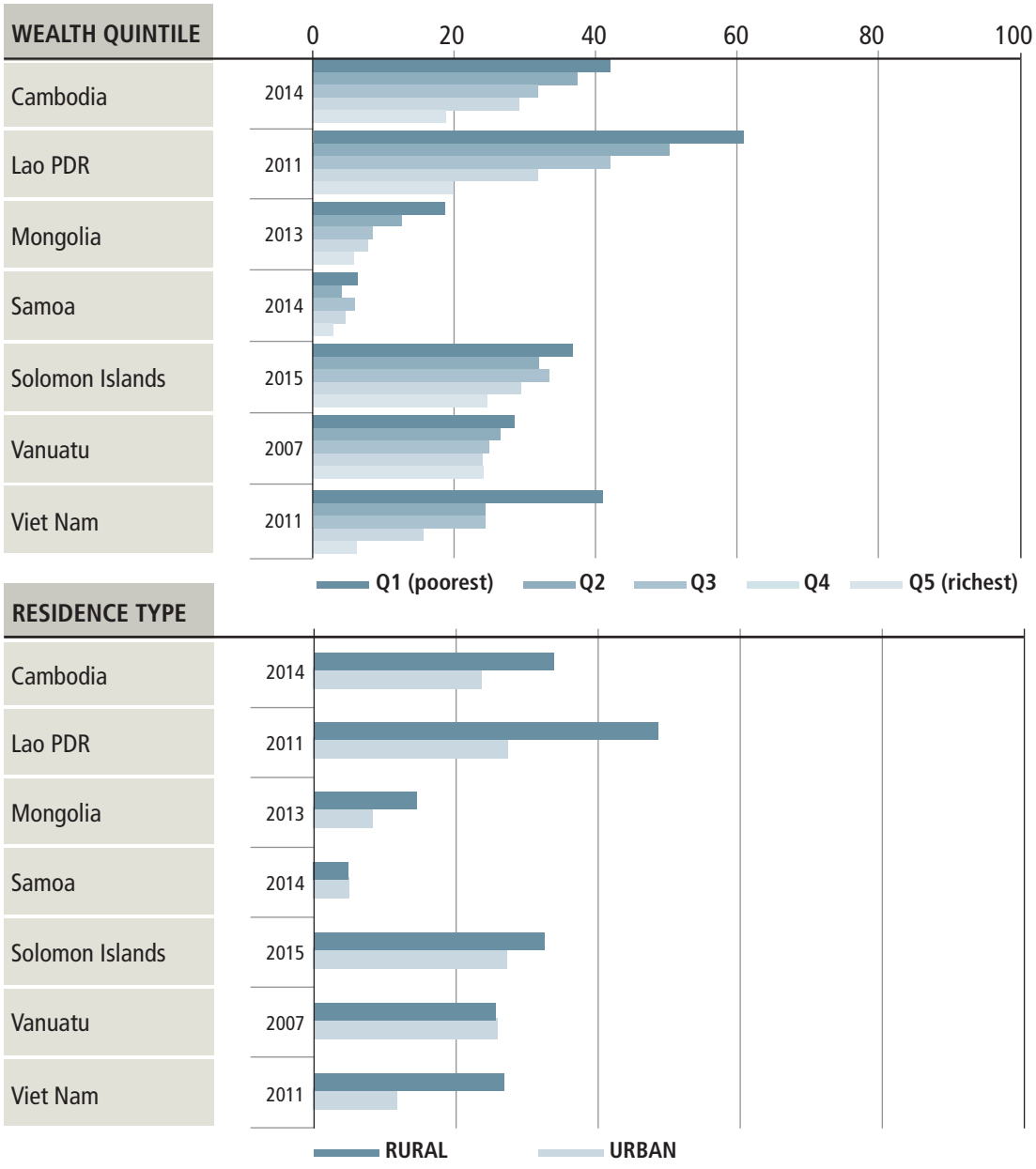
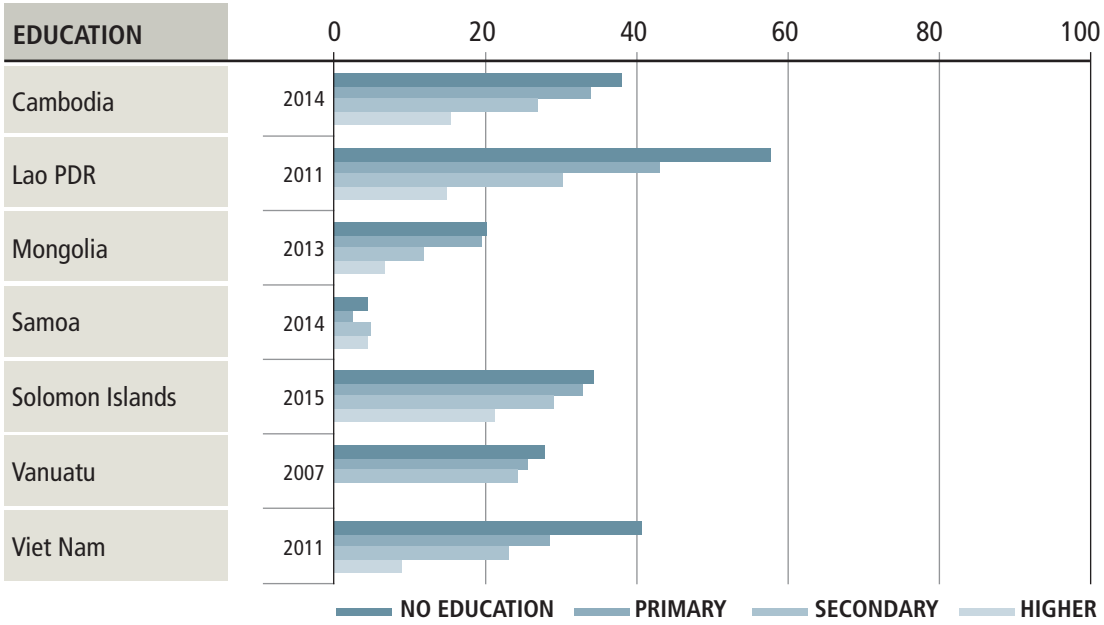


FIG. 29 Stunting prevalence among children aged under 5 years by wealth quintile, residence and maternal education, selected countries in the Western Pacific Region, various years, in percentage *(continued)*



Note: Percentage of those under 5 years of age falling below two standard deviations (moderate and severe) from the median height-for-age of the reference population.

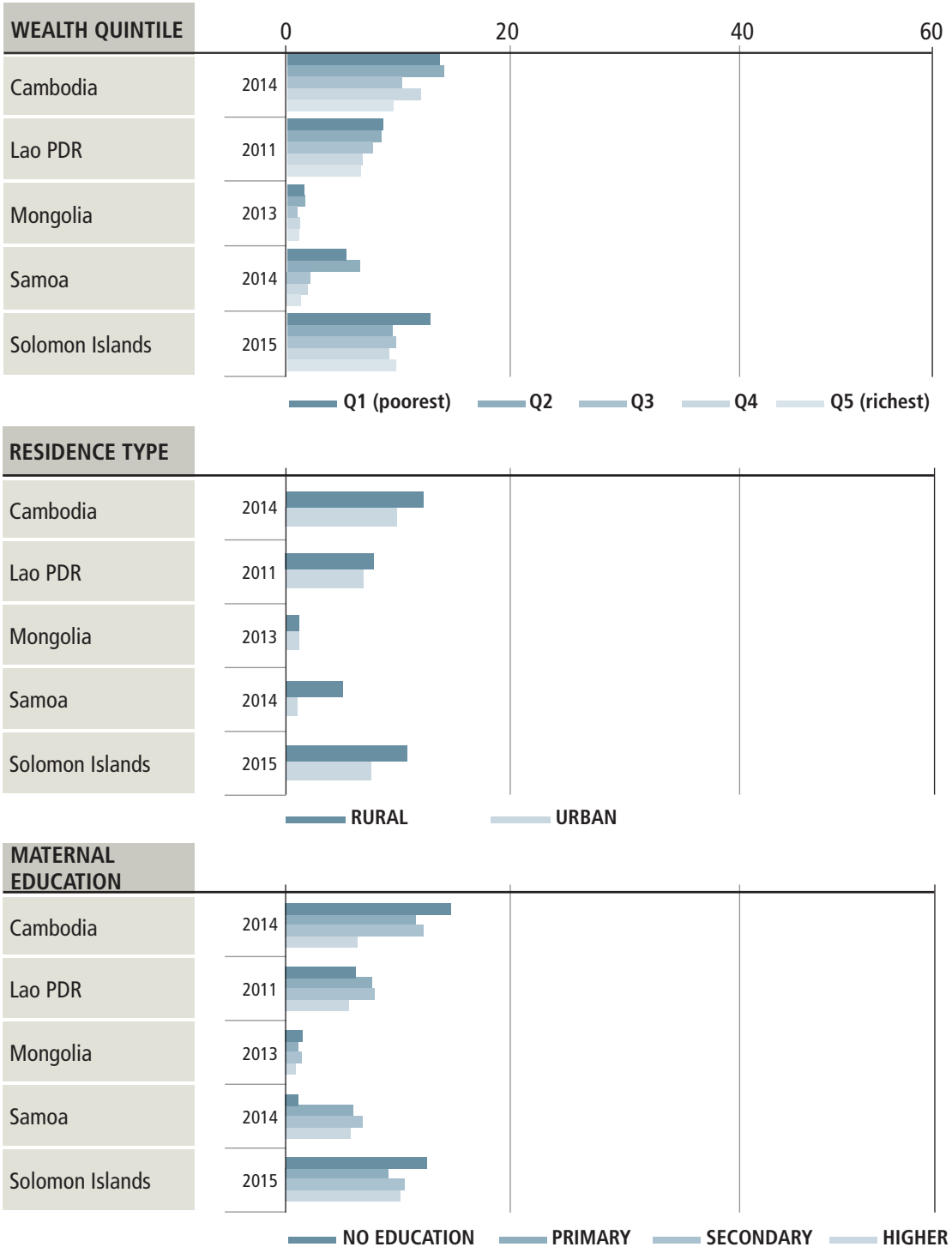
Source: UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Stunting, May 2018, New York.

tion broadly mirrored those for economic inequity. In some countries, undernutrition in children tended to be more prevalent in rural areas.

Child undernutrition (stunting and wasting) is one of the few indicator topics for which relatively good data exist to explore interactions between different equity stratifiers, providing a foundation for targeting policies and programmes to reach population subgroups at highest risk. Multiple stratification reveals that the influence of household wealth on stunting is differently patterned according to geography in different countries (Fig. 31). In Cambodia, the incremental linear association between stunting and household wealth evident in national data was only apparent in rural areas. In urban areas, stunting exhibited a pattern of mass deprivation, with high prevalence in all but the richest households. In Viet Nam, an incremental association between stunting and household wealth was apparent in both rural and urban areas, although the degree of inequity was higher in rural areas.

In most countries for which data are available, wealth inequities in stunting are equivalent for boys and girls. Samoa, Solomon Islands and Vanuatu present some exceptions. A higher prevalence of stunting was apparent among boys in the middle wealth quintiles in these countries compared with girls in the same quintiles.

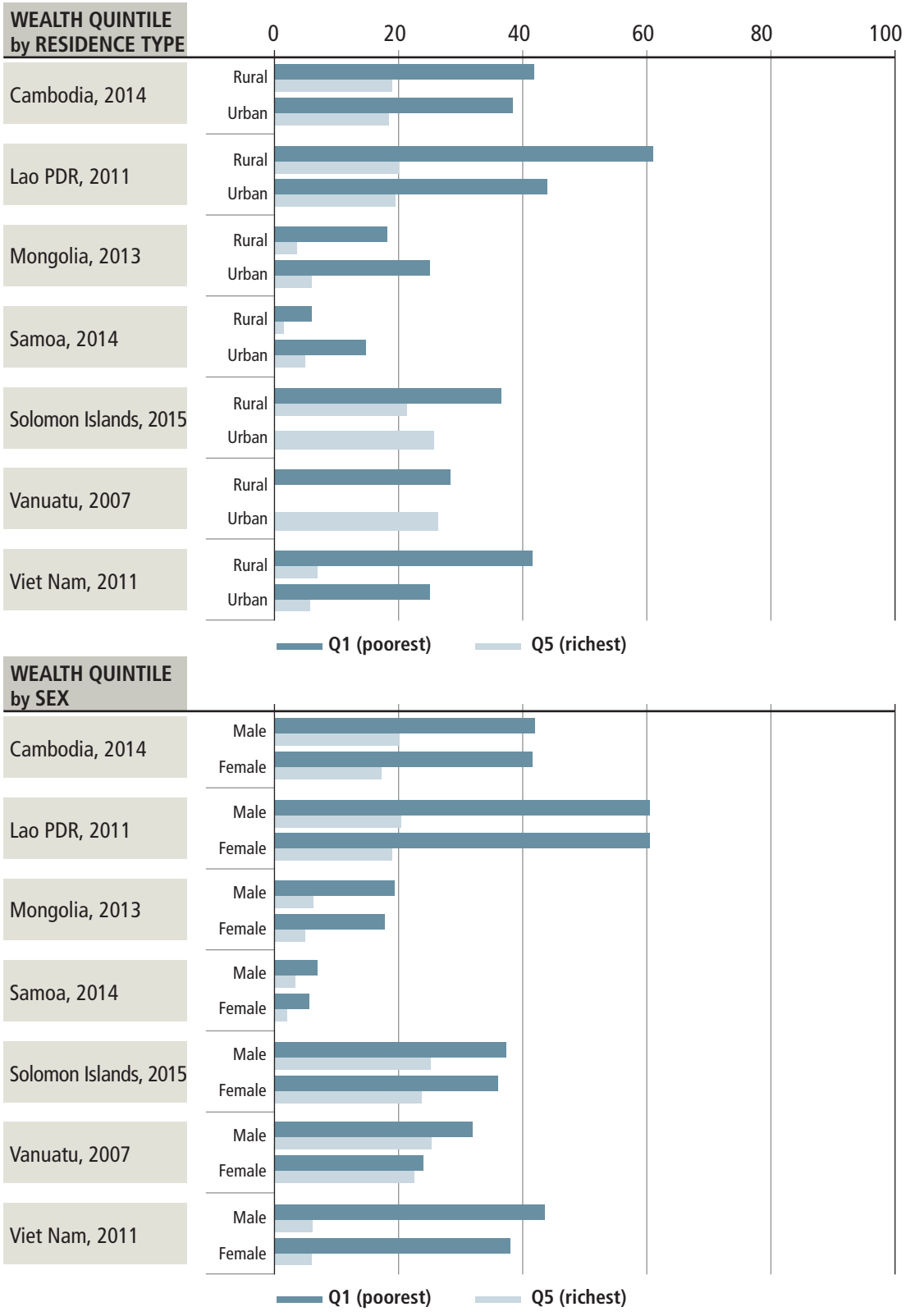
FIG. 30 Wasting prevalence among children aged under 5 years, by wealth quintile, residence and maternal education, selected countries in the Western Pacific Region, various years (in percentage)



Note: Percentage of children under 5 years of age falling below two standard deviations (moderate and severe) from the median weight-for-height of the reference population.

Source: UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Wasting, May 2018, New York.

FIG. 31 **Stunting prevalence among children aged under 5 years, by wealth quintile, residence and sex, selected countries in the Western Pacific Region, various years (in percentage)**



Note: Percentage of those under 5 years of age falling below two standard deviations (moderate and severe) from the median height-for-age of the reference population.

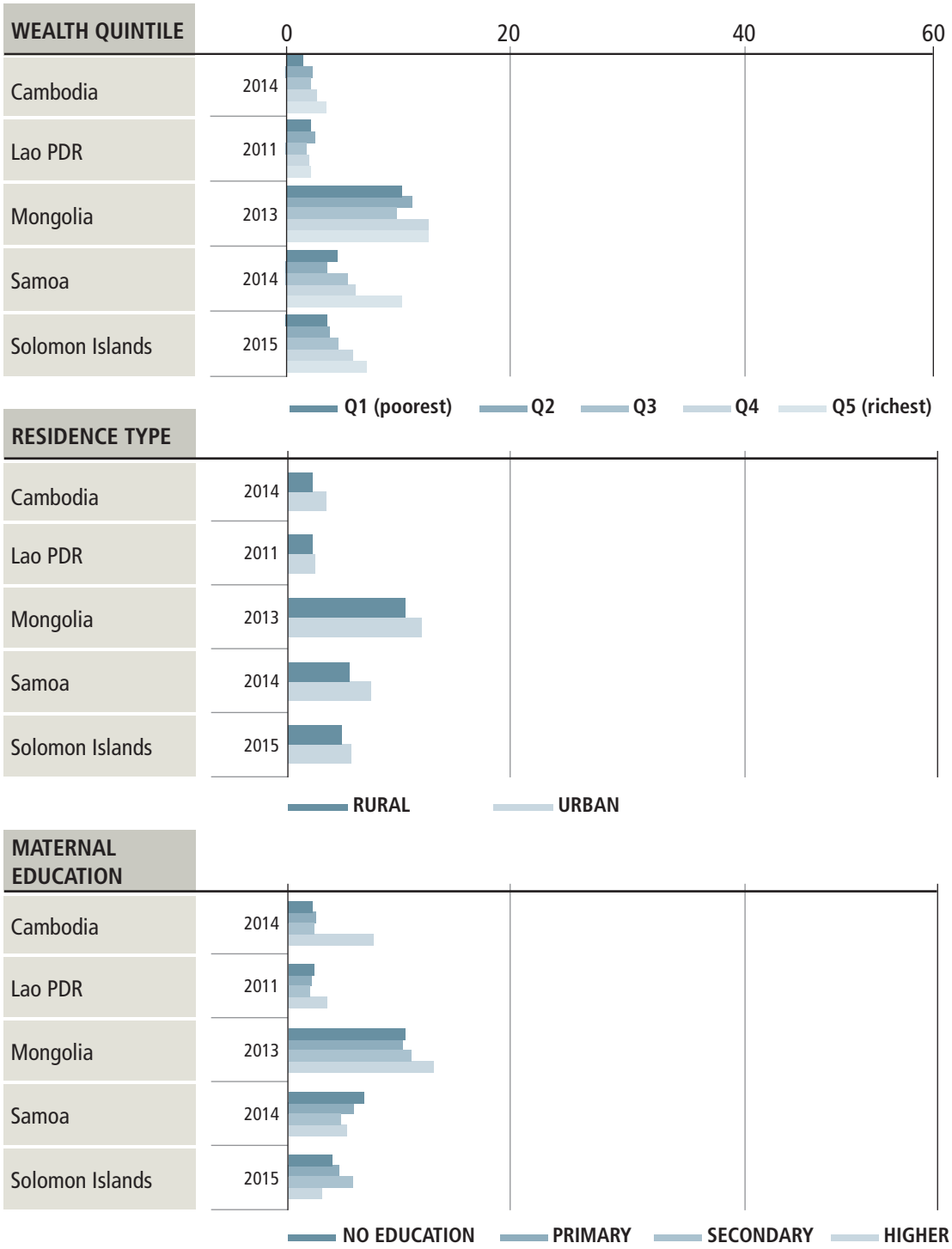
Source: UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Stunting, May 2018, New York.

Childhood overweight and obesity is an increasingly important issue within the Region. The available data show that economic, geographic and social inequities in childhood overweight and obesity were evident in most countries (Fig. 32). A low national prevalence does not necessarily indicate a favourable situation in terms of inequity. While Cambodia had a national prevalence of overweight and obesity of only 2% among children aged under 5 years, children in the wealthiest households were more than twice as likely to be overweight or obese as those in the poorest households, while the prevalence was more than three times higher among children whose mothers had higher education compared with those whose mothers had no education. In Mongolia where 10.5% of children aged under 5 years were overweight or obese nationally, the prevalence of overweight and obesity was only 20% higher among children from wealthy households compared with those in the poorest households.

Multiple stratification reveals that among children under 5 years, boys in more advantaged social groups were more likely to be classified as overweight in some countries (Fig. 33). For example, in the Lao People's Democratic Republic, boys in the richest households were twice as likely as girls of comparable economic position to be overweight or obese. In Samoa, gender inequities were apparent in urban areas, with boys 2.3 times more likely to be overweight or obese.

Among older children, gender inequities in childhood overweight and obesity were evident (Fig. 34). In Pacific island countries and areas, girls were more likely to be classified as overweight than boys; elsewhere in the Region, boys were more likely to be overweight than girls.

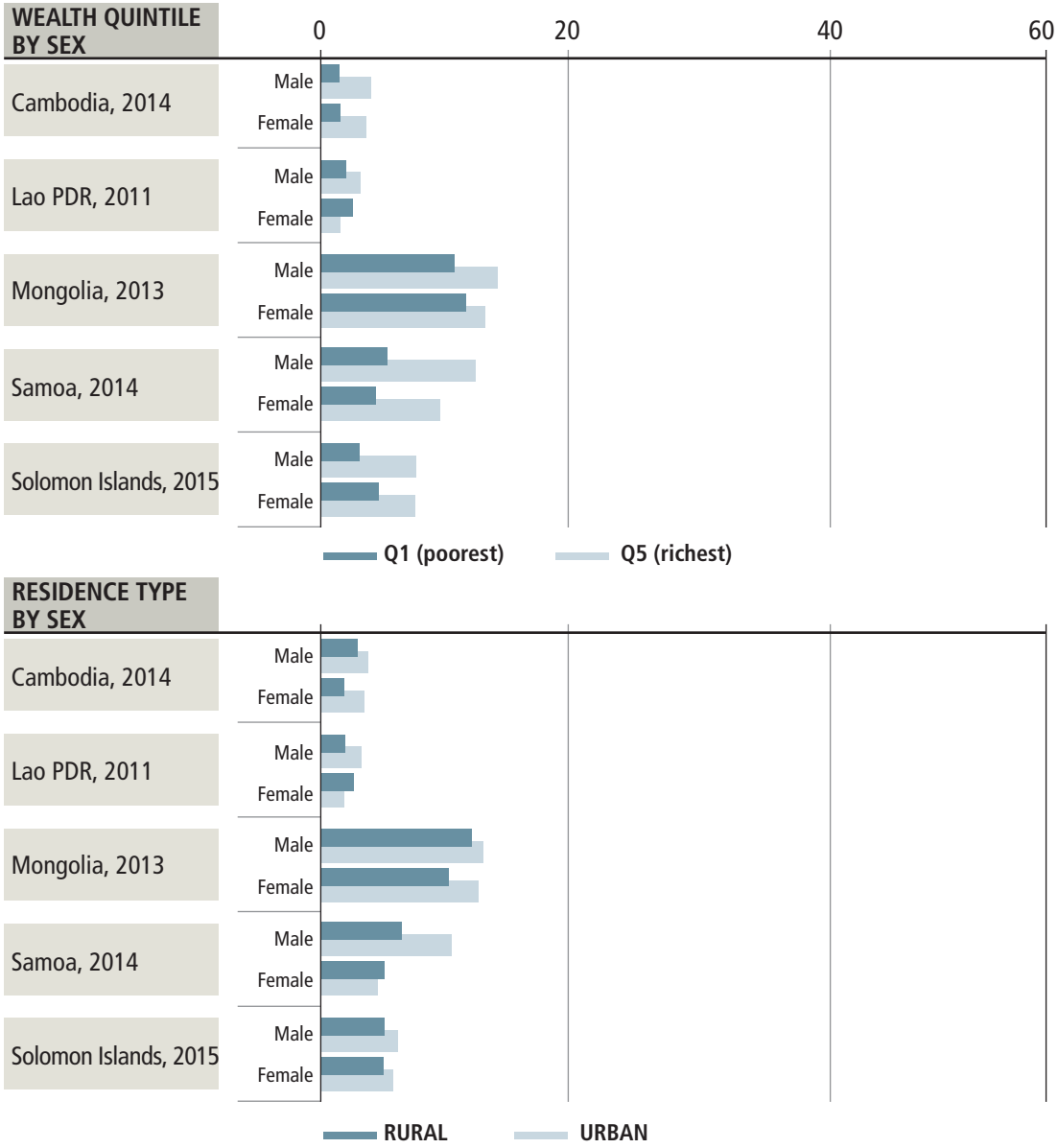
FIG. 32 **Overweight prevalence among children aged under 5 years, by wealth quintile, residence and maternal education, selected countries in the Western Pacific Region, various years (in percentage)**



Note: Percentage of children under 5 years of age falling above two standard deviations (moderate and severe) from the median weight-for-height of the reference population.

Source: UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Overweight, May 2018, New York.

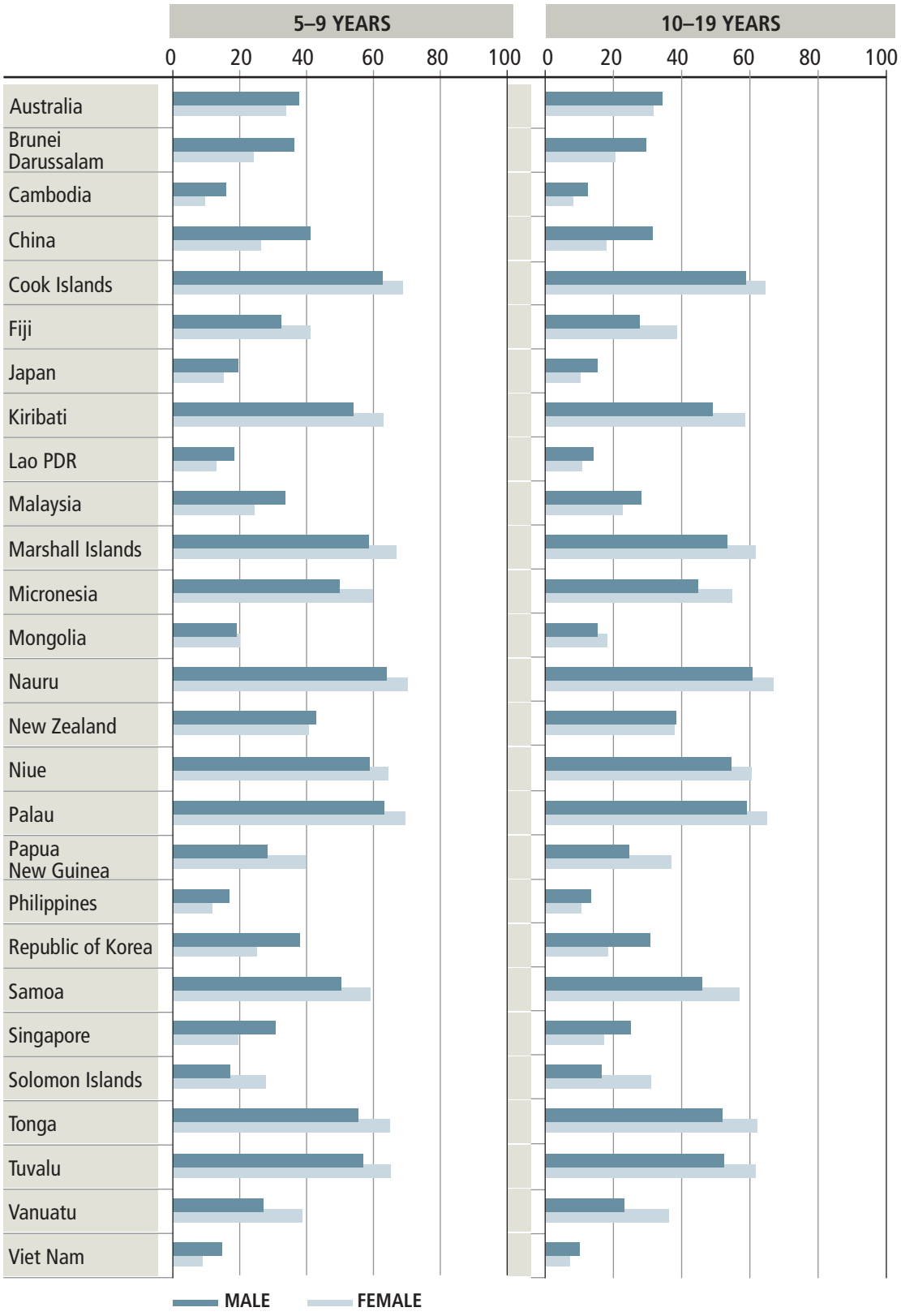
FIG. 33 Overweight prevalence among children aged under 5 years by residence and sex, selected countries in the Western Pacific Region, various years (in percentage)



Note: Percentage of children under 5 years falling above two standard deviations (moderate and severe) from the median weight-for-height of the reference population.

Source: UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Overweight, May 2018, New York.

FIG. 34 Overweight prevalence among children aged 5–9 years and 10–19 years by sex, selected countries in the Western Pacific Region, 2016 (in percentage)



Note: Percentage of children 5–9 years and 10–19 years falling above one standard deviation from the median weight-for-height of the reference population.

Source: World Health Organization Global Health Observatory Data Repository (http://apps.who.int/gho/data/node.main.BMIOVERWEIGHTC?lang=en, accessed Aug. 2018).

Physical activity

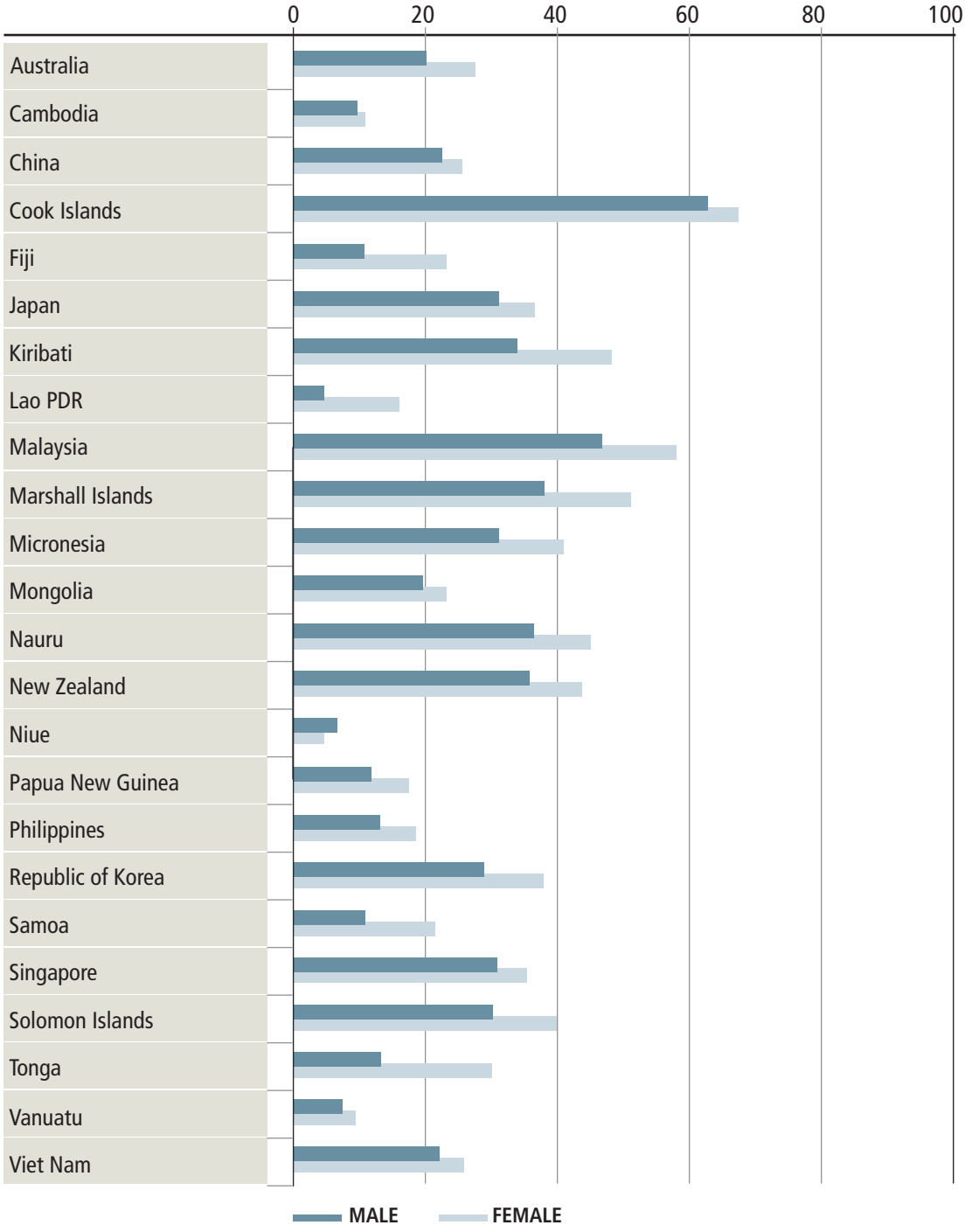
In the majority of countries for which data are available, women are less likely to meet physical activity guidelines than men (Fig. 35). Evidence suggests that the reasons for these discrepancies are likely related to gendered social roles, with women's time pressured due to caring responsibilities and men's greater occupational exposure to physical work likely to explain the evident differences *(14).* The largest gender inequity is evident in the Lao People's Democratic Republic, where men are more than three times as likely as women to engage in sufficient physical activity.

Data show that gender inequities in physical activity are differentially influenced by geographic, educational, ethnicity and income determinants (Figs. 36–39). Living in an urban area significantly reduced the probability of engaging in occupation-related physical activity for both men and women (Fig. 36). These disparities were most pronounced in China. Gendered differences across geographic areas in leisure-time physical activity were less apparent (Fig. 36).

Ethnicity influenced the likelihood of physical activity in some countries (Fig. 37). A profound gender disparity was evident in leisure-time physical activity among ethnic Fijians, with men more than twice as likely as women to engage in physical activity for leisure. In Malaysia, levels of physical activity for leisure were patterned according to ethnicity for men, while for women the prevalence of leisure-time physical activity differed by less than 2% across ethnic groups.

The influence of income and level of education on physical activity differed according to gender, with substantial subregional variation (Figs. 38, 39). For instance, profound social gradients were evident in China with the degree of inequity highest by income for women, while for men, level of education had a stronger influence on the prevalence of physical activity. In Malaysia and the Philippines, education was an important determinant of physical activity for men, whereas physical activity levels for women in these countries were less influenced by level of education.

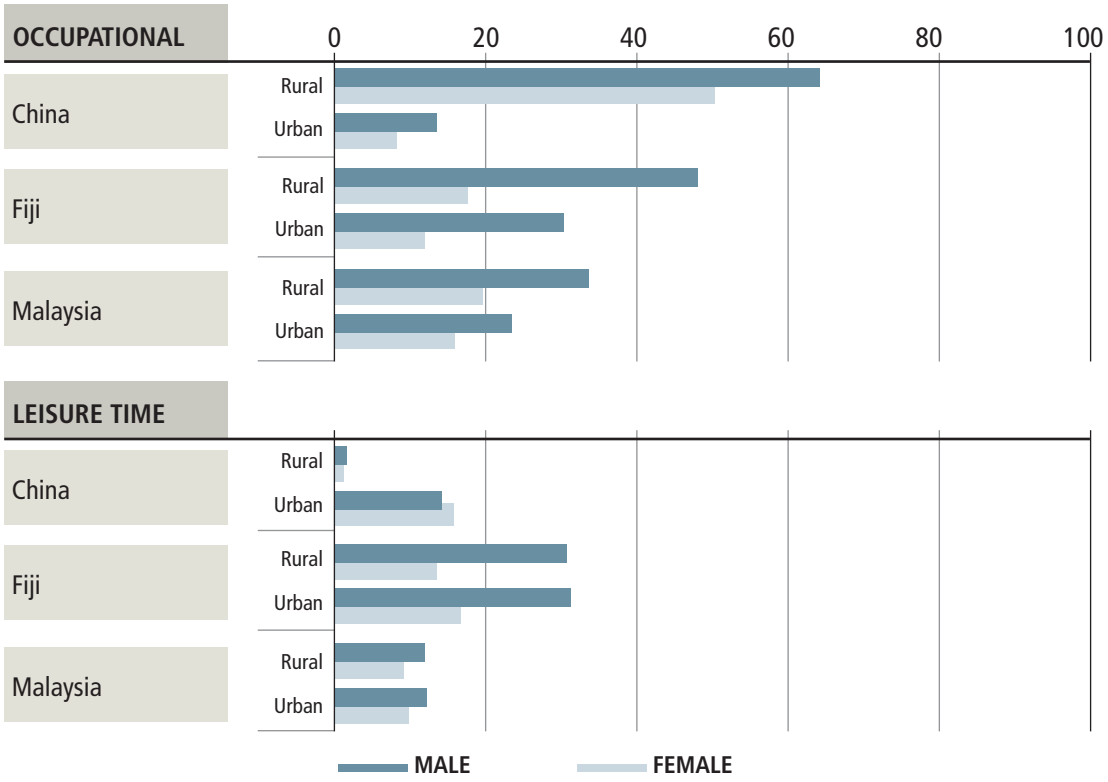
FIG. 35 Age-standardized prevalence of insufficient physical activity, by sex, selected countries in the Western Pacific Region, 2010 (in percentage)



Note: Percent of adult population attaining less than 150 minutes of moderate-intensity physical activity per week, or less than 75 minutes of vigorous-intensity physical activity per week, or equivalent.

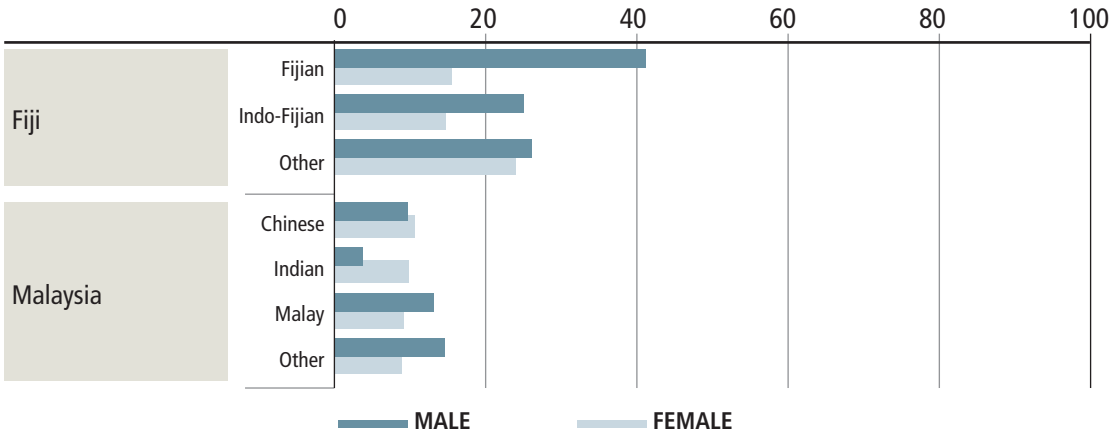
Source: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Aug. 2018).

FIG. 36 Prevalence of physical activity by type, by sex and residence, selected countries in the Western Pacific Region, 2010 (in percentage)



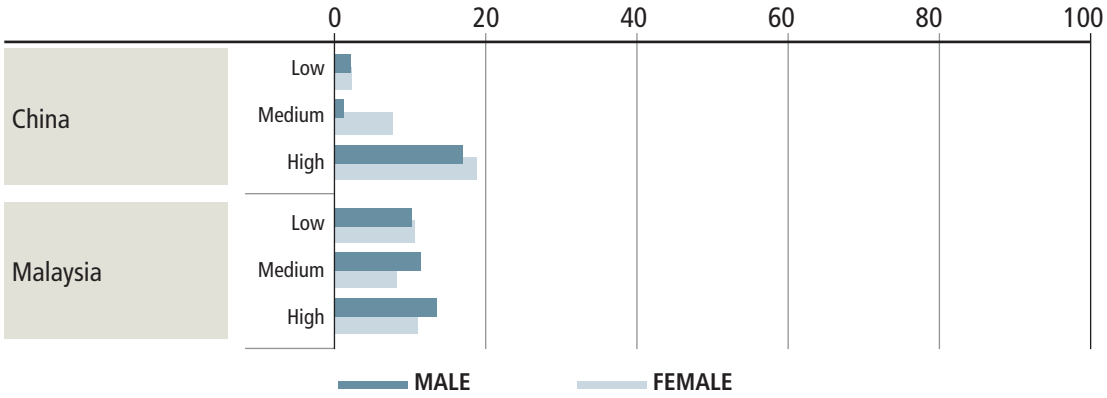
Source: Noncommunicable disease risk factors and socioeconomic inequalities – what are the links? A multicountry analysis of noncommunicable disease surveillance data. Manila: WHO Regional Office for the Western Pacific; 2010 (http://www.wpro.who.int/publications/docs/WHOSESFINALforupload.pdf, accessed Aug. 2018).

FIG. 37 Prevalence of leisure-time physical activity, by sex and ethnicity, Fiji and Malaysia, 2010 (in percentage)



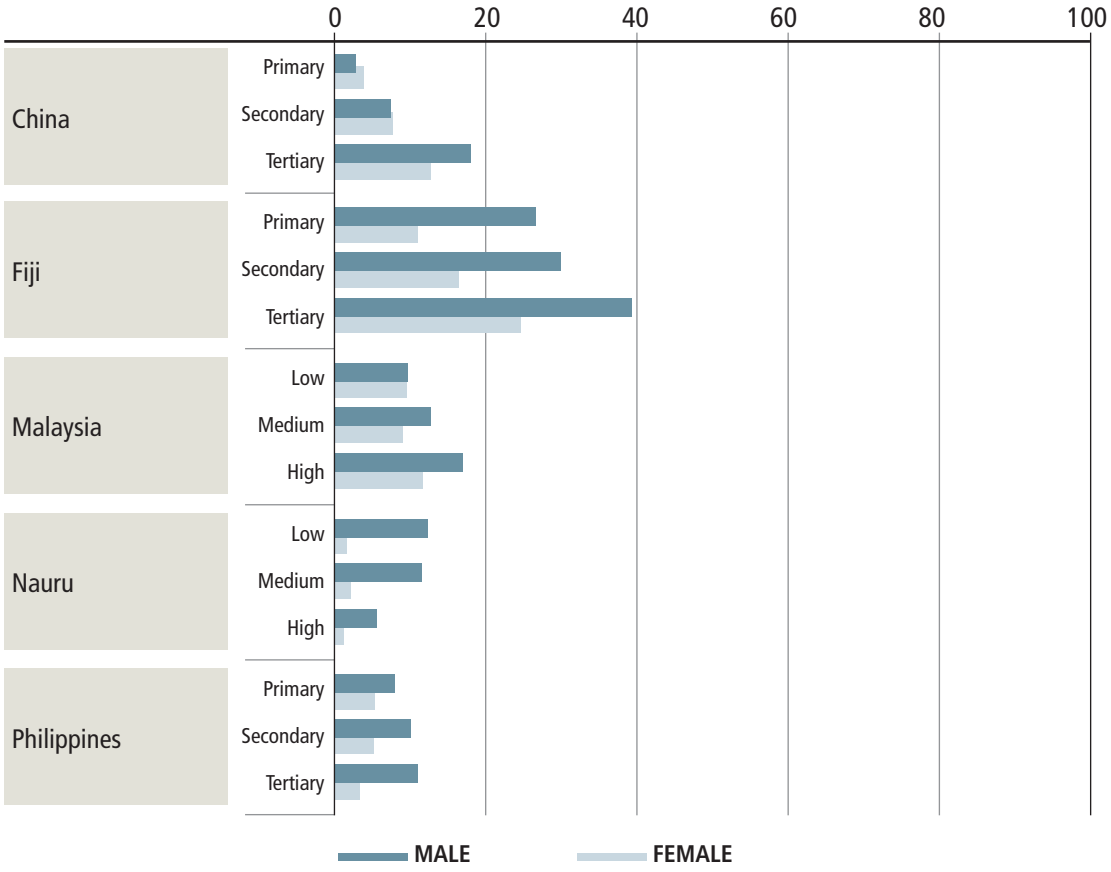
Source: Noncommunicable disease risk factors and socioeconomic inequalities – what are the links? A multicountry analysis of noncommunicable disease surveillance data. Manila: WHO Regional Office for the Western Pacific; 2010 (http://www.wpro.who.int/publications/docs/WHOSESFINALforupload.pdf, accessed Aug. 2018).

FIG. 38 Prevalence of leisure-time physical activity, by sex and income level, China and Malaysia, 2010 (in percentage)



Source: Noncommunicable disease risk factors and socioeconomic inequalities – what are the links? A multicountry analysis of noncommunicable disease surveillance data. Manila: WHO Regional Office for the Western Pacific; 2010 (http://www.wpro.who.int/publications/docs/WHOSESFINALforupload.pdf, accessed Aug. 2018).

FIG. 39 Prevalence of leisure-time physical activity, by sex and level of education, selected countries in the Western Pacific Region, 2010 (in percentage)



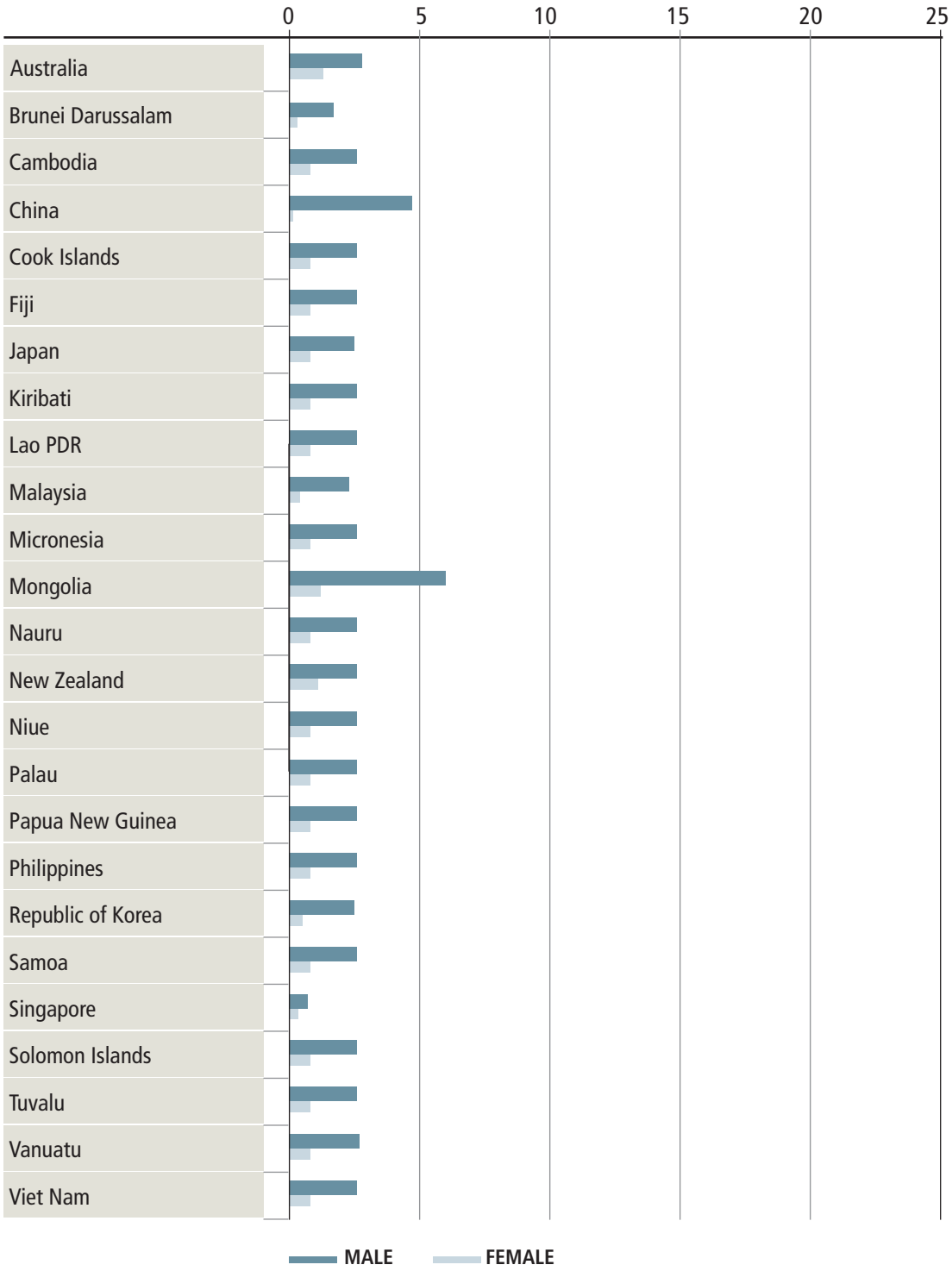
Source: Noncommunicable disease risk factors and socioeconomic inequalities – what are the links? A multicountry analysis of noncommunicable disease surveillance data. Manila: WHO Regional Office for the Western Pacific; 2010 (http://www.wpro.who.int/publications/docs/WHOSESFINALforupload.pdf, accessed Aug. 2018).

Alcohol

Inequities in alcohol consumption are an important target for reducing NCD prevalence, as well as fatal and non-fatal injuries such as those associated with road traffic and self-harm. The available data for the Region suggest that men are significantly more likely than women to be diagnosed with a mental or behavioural disorder due to harmful use of alcohol (Fig. 40). The largest within-country inequity was evident in China, where men were 47 times more likely to use alcohol at harmful levels than women. This presents an outlier with the next-greatest level of inequity evident in Mongolia, where men were at a fivefold increased risk.

Within-country inequities demonstrate that educational and geographic circumstances differentially influence harmful alcohol consumption between men and women in some countries (Figs. 41, 42). In Fiji, living in an urban area increased the risk of harmful alcohol consumption among women to a greater extent than for men. Conversely, education influenced harmful alcohol consumption for Fijian men but not women. Geographic region did not influence levels of harmful alcohol consumption for men or women in China. In Nauru, the degree of inequity patterned according to level of education was equivalent for men and women; disparities patterned according to gender or education were not evident in other countries.

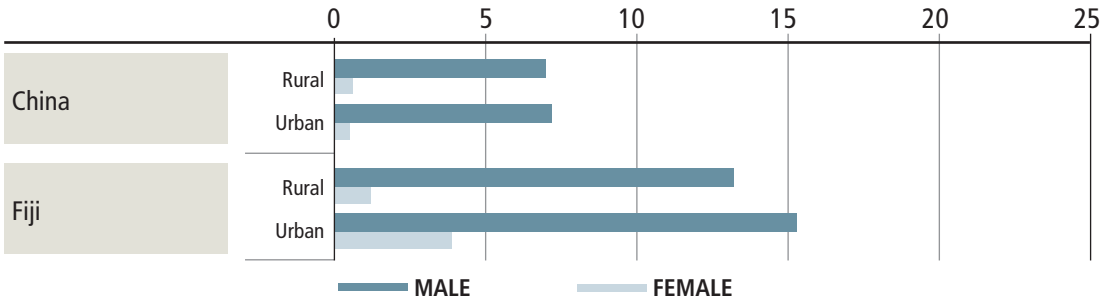
FIG. 40 Harmful alcohol use, by sex, selected countries in the Western Pacific Region, 2010 (in percentage)



Note: Harmful alcohol use among persons aged 15 years and over, 12-month prevalence.

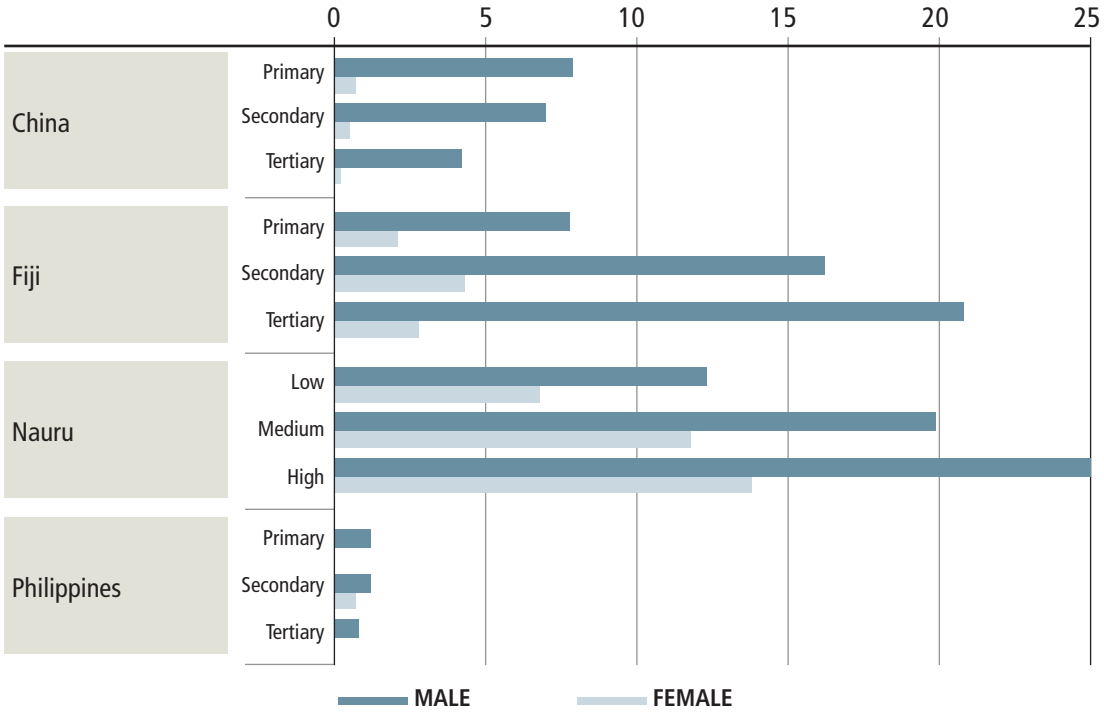
Source: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Jul. 2018).

FIG. 41 Harmful alcohol use, by residence and sex, China and Fiji, 2010 (in percentage)



Source: Noncommunicable disease risk factors and socioeconomic inequalities – what are the links? A multicountry analysis of noncommunicable disease surveillance data. Manila: WHO Regional Office for the Western Pacific; 2010 (http://www.wpro.who.int/publications/docs/WHOSESFINALforupload.pdf, accessed Aug. 2018).

FIG. 42 Harmful alcohol use, by level of education and sex, selected countries in the Western Pacific Region, 2010 (in percentage)



Source: Noncommunicable disease risk factors and socioeconomic inequalities – what are the links? A multicountry analysis of noncommunicable disease surveillance data. Manila: WHO Regional Office for the Western Pacific; 2010 (http://www.wpro.who.int/publications/docs/WHOSESFINALforupload.pdf, accessed Aug. 2018).

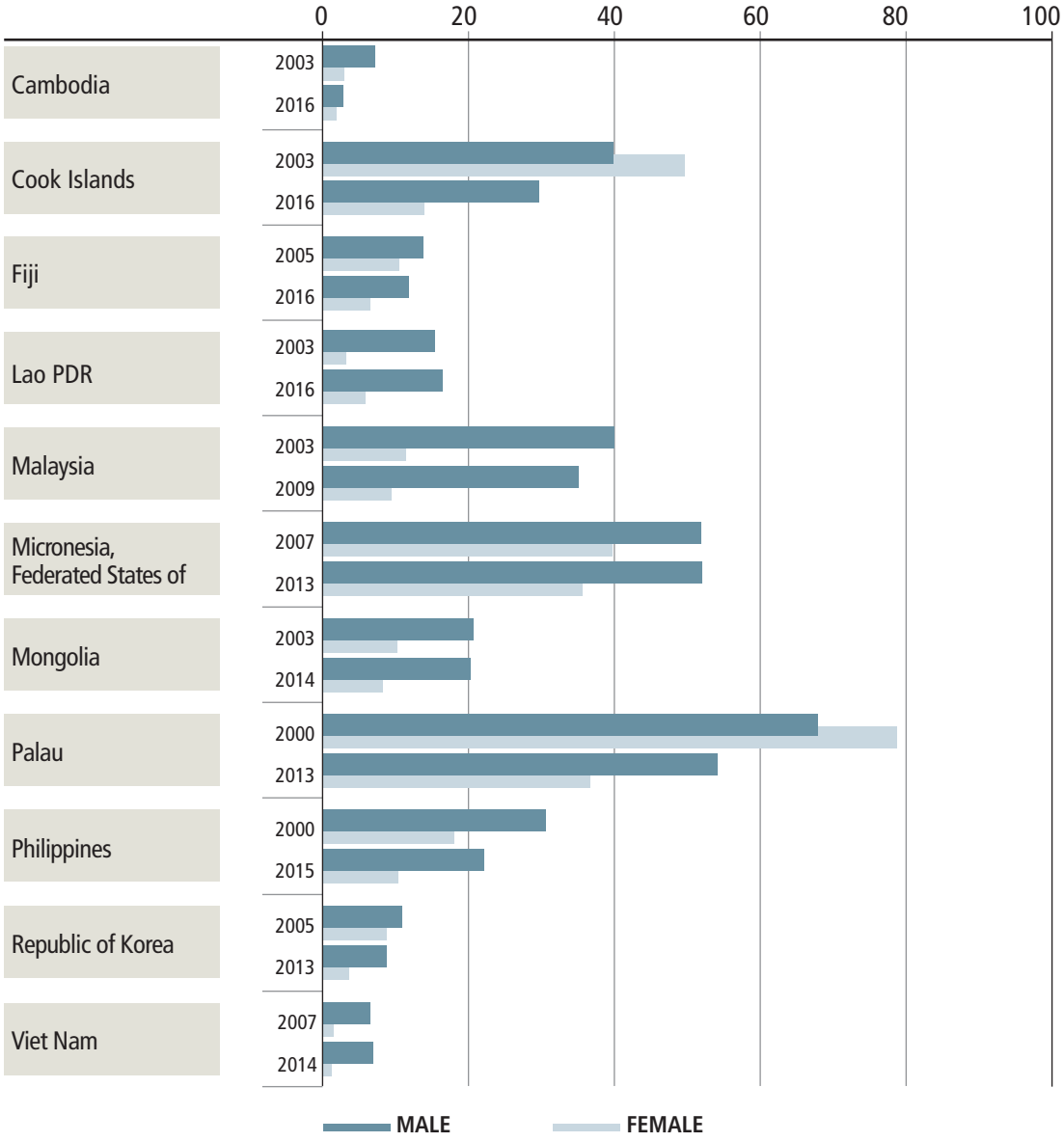
Tobacco

Reflecting global trends, tobacco use was significantly more common among men than women in the Western Pacific Region. Data show that substantial progress has been made in curbing both the aggregate prevalence and gender inequities in youth tobacco use in some countries (Fig. 43). For instance, in the Cook Islands and Palau, marked reductions in the prevalence of tobacco use among women aged 13 to 15 since the beginning of the 21st century drove aggregate reductions in youth tobacco use in those countries. With the pace of change significantly lower among male youths, the pattern of gender inequity has reversed. In other countries in the Region, including the Lao People's Democratic Republic, Mongolia and the Federated States of Micronesia, no improvement in aggregate youth tobacco use or associated gender inequities has been evident.

Tobacco use was not evenly distributed across social groups, with social and geographic determinants interacting with gender to influence smoking rates (Fig. 44). In China and Malaysia, men living in urban areas were moderately less likely to smoke than those living in rural areas. Among women, rates of smoking were low regardless of geographic region. In Fiji, where smoking among women was more prevalent, living in an urban area was protective for both men and women.

The degree of education-related inequity in smoking tended to be more pronounced for men than for women (Fig. 44). Nauru presented an exception, with smoking rates patterned more markedly by level of education for women. Contrary to regional and global trends, rates of current smoking were higher among women than men in Nauru.

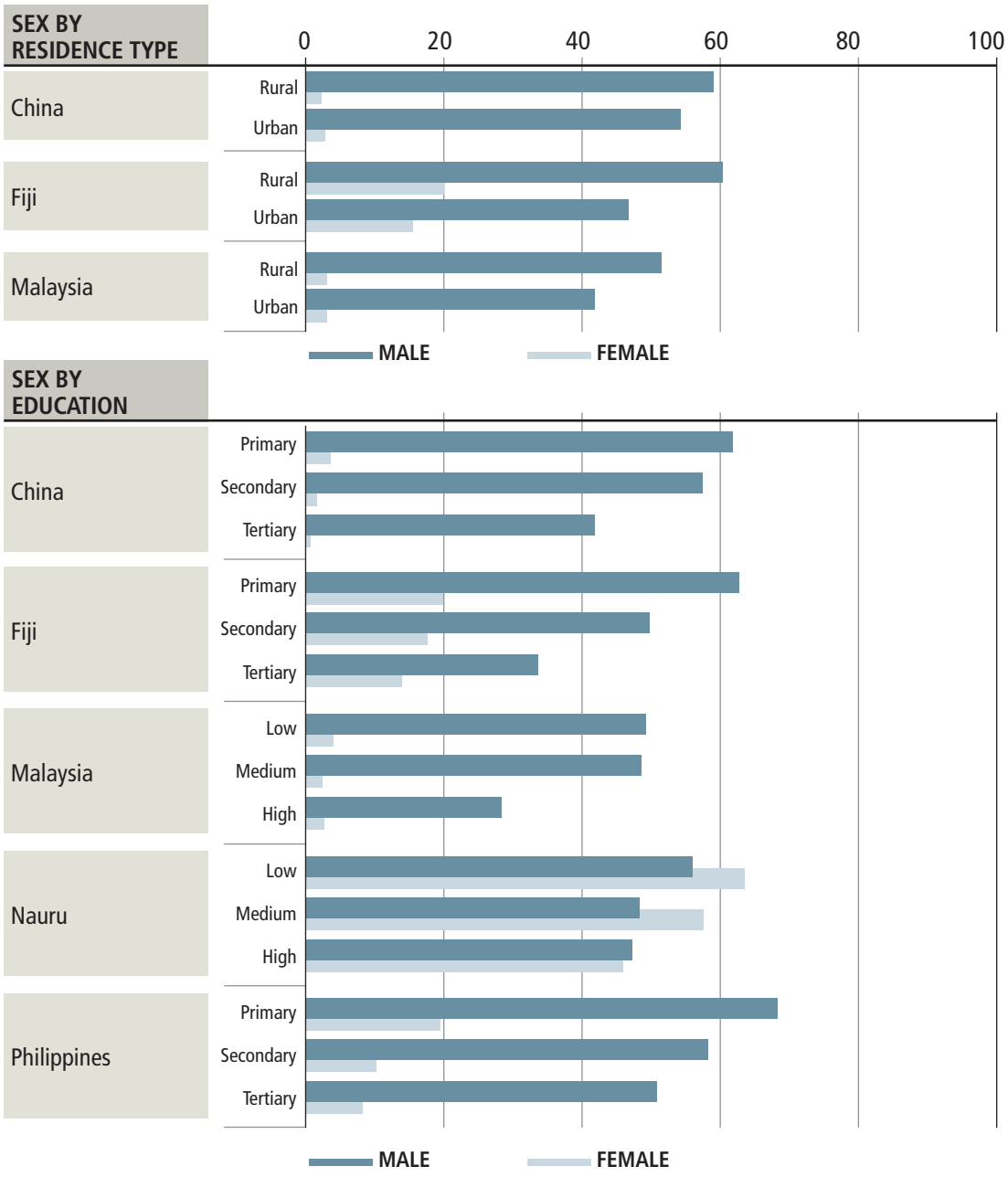
FIG. 43 Current tobacco use among youth, by sex, selected countries in the Western Pacific Region, 2003–2016 (in percentage)



Note: Prevalence of current tobacco use among those aged 13–15 years, with the following exceptions: Philippines, current cigarette smoking among those aged 13–15 years; Republic of Korea, current cigarette smoking among those aged 13–18 years.

Source: WHO report on the global tobacco epidemic 2017 [dataset]. World Health Organization (http://www.who.int/tobacco/global_report/2013/full_dataset/en/, accessed Aug. 2018).

FIG. 44 Current smoking rate, by sex, residence and level of education, selected countries in the Western Pacific Region, 2010 (in percentage)



Source: Noncommunicable disease risk factors and socioeconomic inequalities – what are the links? A multicountry analysis of noncommunicable disease surveillance data. Manila: WHO Regional Office for the Western Pacific; 2010 (http://www.wpro.who.int/publications/docs/WHOSESFINALforupload.pdf, accessed Aug. 2018).

Overweight and obesity

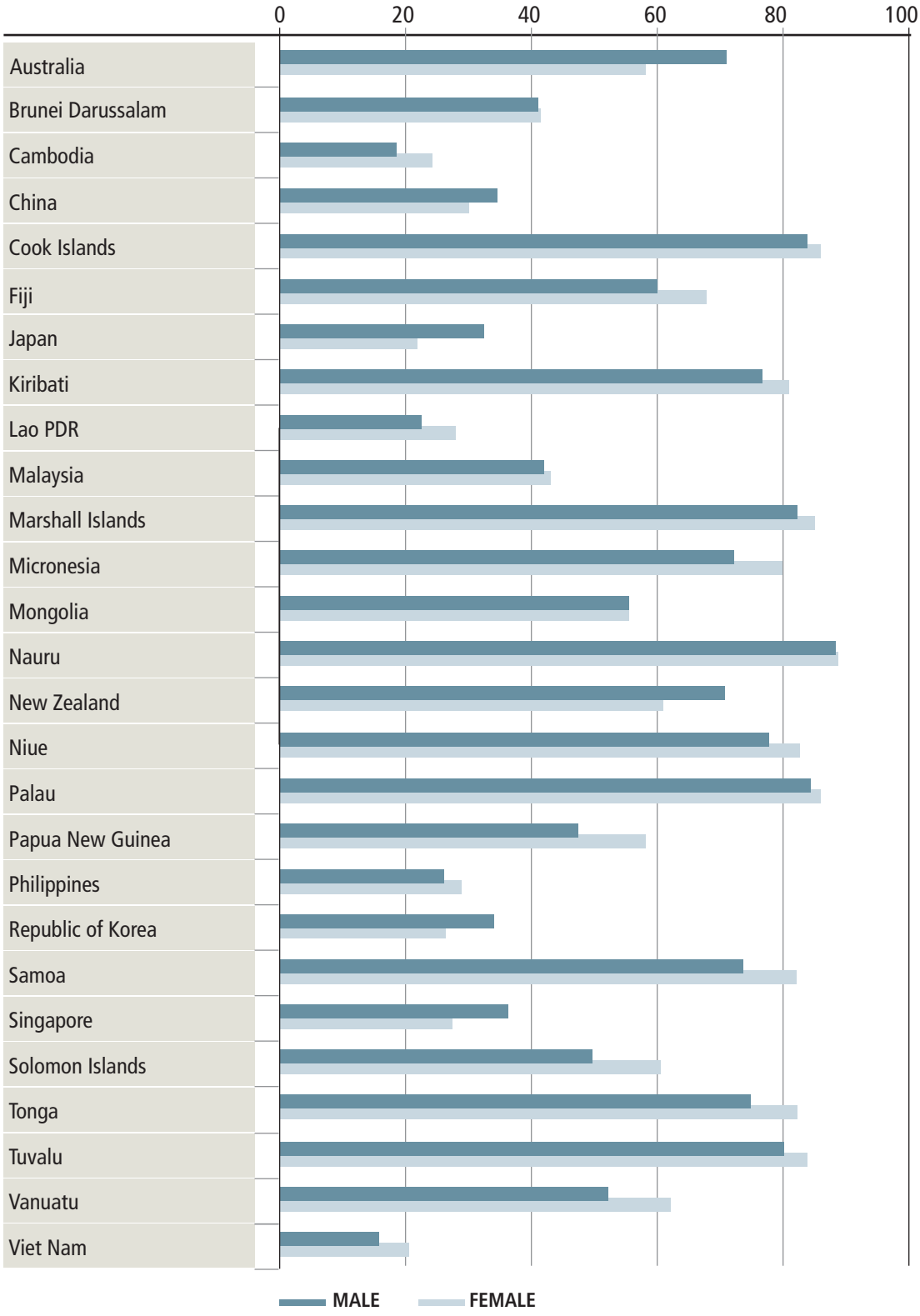
Substantial subregional variations were evident in rates of overweight and obesity among adults (Fig. 45). Reflecting global trends, sex-disaggregated data show that women tend to be at higher risk in lower-middle and upper-middle-income countries in the Western Pacific Region. The inverse is true in the Region's high-income countries. Mongolia presents an exception, where men and women were equally likely to be classified as overweight or obese (55.5%).

More acute inequities were evident (Fig. 46) in the distribution of men and women classified as obese (that is, with a BMI of 30 or greater). For example, in Samoa, women were 8.4% more likely than men to be classified in the combined categories of overweight or obese (that is, with a BMI of 25 or greater). However, when limited to obesity alone, prevalence differs by 15.1% between Samoan men and women. Given the more acute risk of co-morbid NCDs at the higher end of the BMI scale, these disparities represent an important health inequity.

The interplay of gender and other facets of social position is an important consideration for addressing obesity and reducing the concomitant NCD burden. In Australia, the rate of obesity was progressively graded according to socioeconomic disadvantage and area of residence for women, while for men these social gradients were less acute (Fig. 47). Elsewhere across the Region, geographic inequities in obesity tended to be more pronounced among men than women (Fig. 48). The social gradient evident in Australian data was less apparent in lower-middle and upper-middle-income countries in the Region, when stratified by level of education or income (Figs. 49, 50).

In most countries across the Region, adverse biomedical risk factors were more common among men than women (Figs. 51, 52). Reflecting differences in the social and geographic patterning of obesity and behavioural risk factors, raised fasting blood glucose and blood pressure among both men and women tended to be more prevalent in urban areas, and were inversely associated with education level in higher-prevalence countries (Figs. 53, 54).

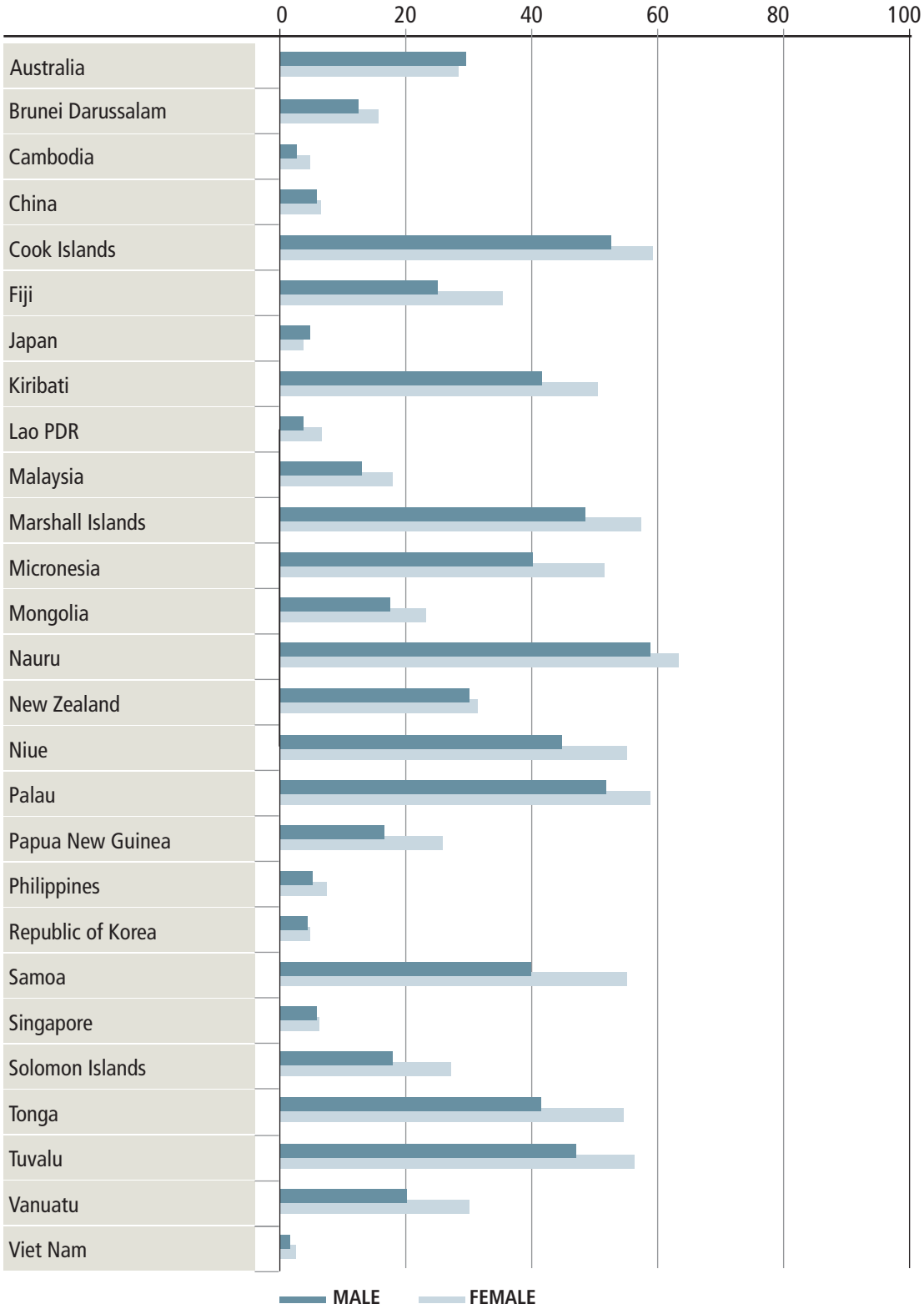
FIG. 45 Prevalence of overweight and obesity, by sex, selected countries in the Western Pacific Region, 2016 (in percentage)



Note: Percent of adult population with a body mass index (BMI) of 25 kg/m^2 or higher.

Source: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Aug. 2018).

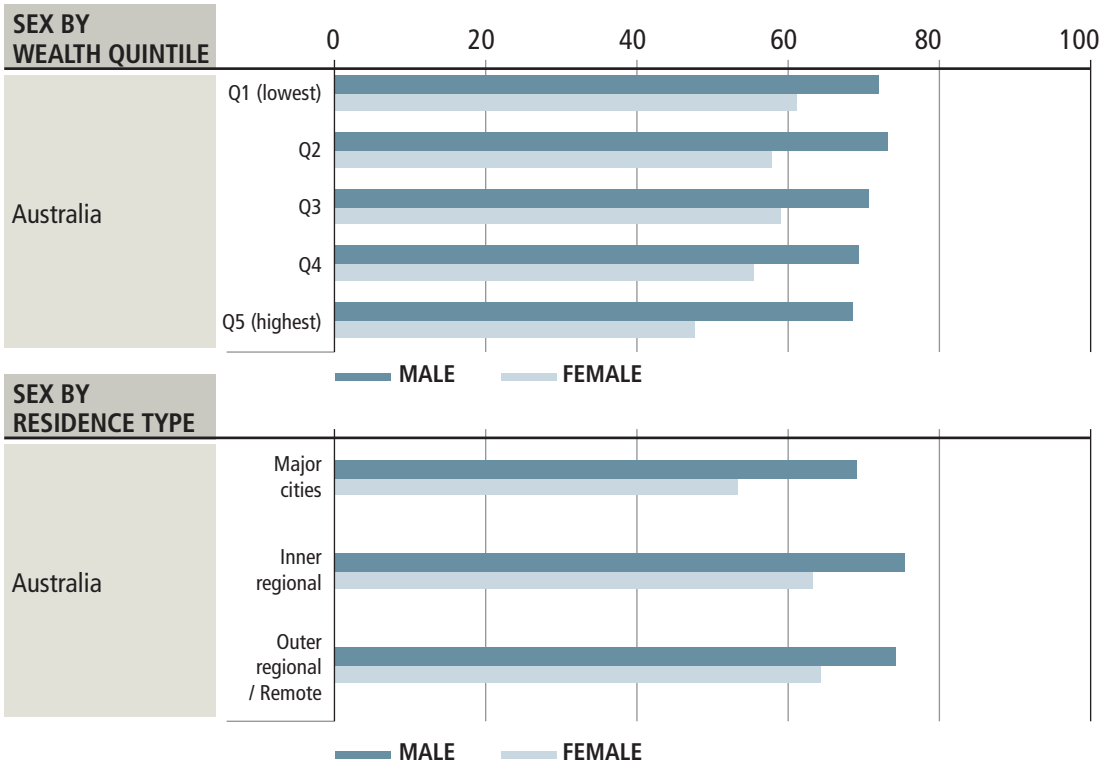
FIG. 46 Prevalence of obesity, by sex, selected countries in the Western Pacific Region, 2016 (in percentage)



Note: Percent of adult population with a body mass index (BMI) of 30 kg/m^2 or higher.

Source: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Aug. 2018).

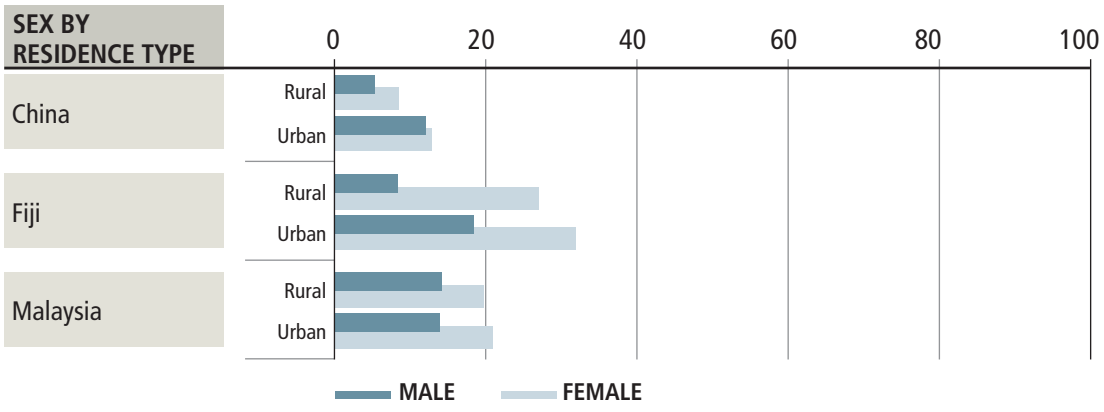
FIG. 47 Overweight and obese persons, by wealth quintile, residence and sex, Australia, 2014–2015 (in percentage)



Note: Socioeconomic Index for Areas Index of Relative Socioeconomic Disadvantage – Overweight and obesity classification is based on measured height and weight.

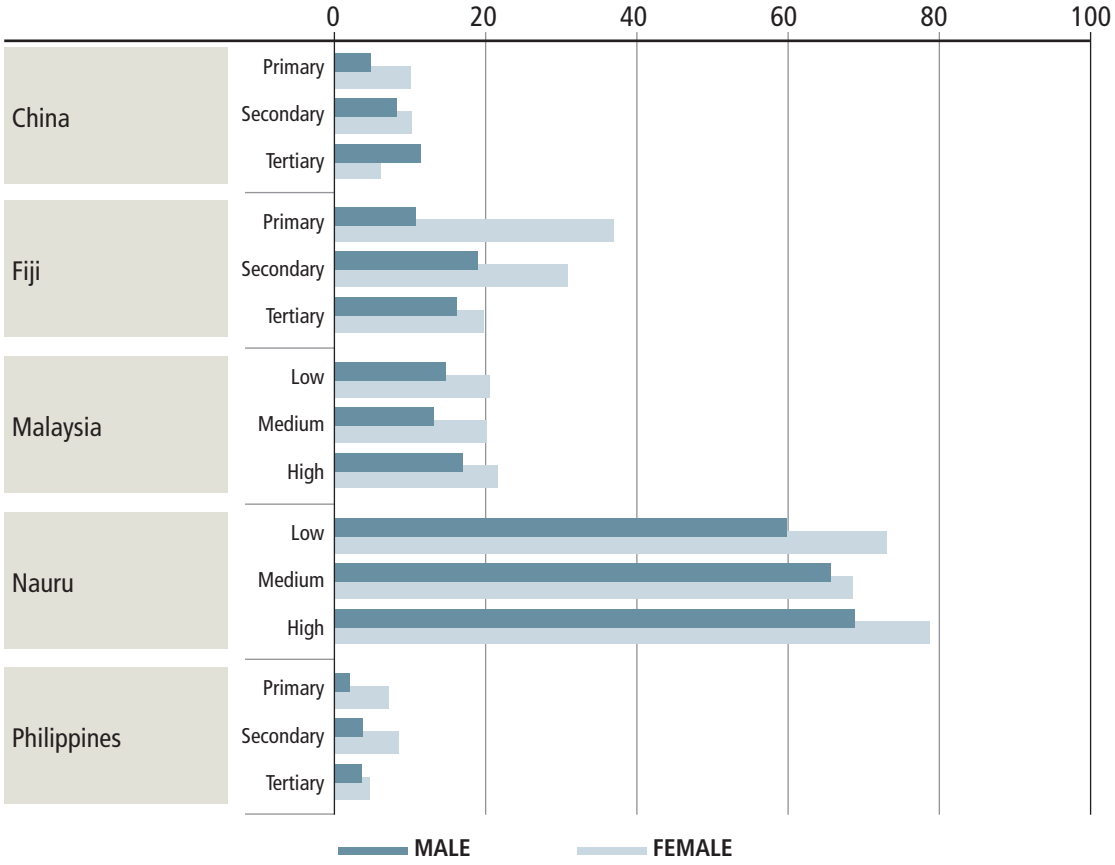
Source: Australian Institute of Health and Welfare. A picture of overweight and obesity in Australia. Australian Government (https://www.aihw.gov.au/reports/overweight-obesity/a-picture-of-overweight-and-obesity-in-australia/data, accessed Jul. 2018).

FIG. 48 Obesity, by residence, and sex, selected countries in the Western Pacific Region, 2010 (in percentage)



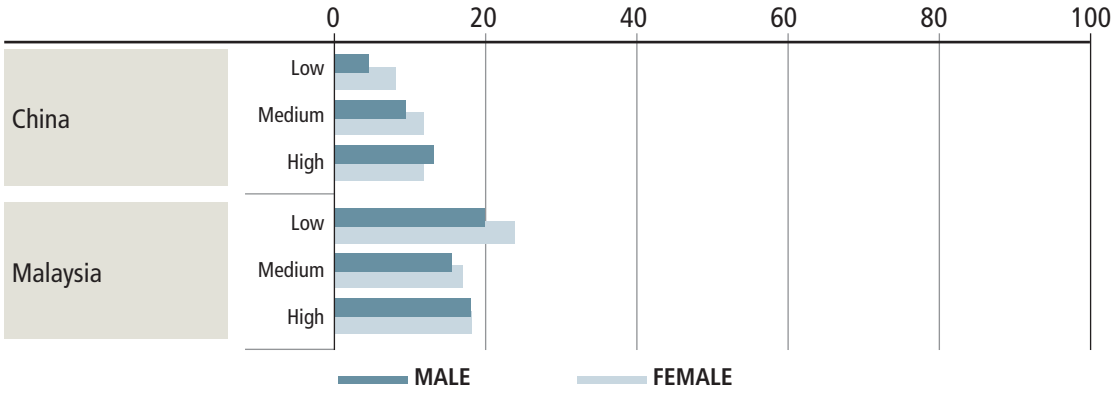
Source: Noncommunicable disease risk factors and socioeconomic inequalities – what are the links? A multicountry analysis of noncommunicable disease surveillance data. Manila: WHO Regional Office for the Western Pacific; 2010 (http://www.wpro.who.int/publications/docs/WHOSESFINALforupload.pdf, accessed Aug. 2018).

FIG. 49 Obesity, by level of education, and sex, selected countries in the Western Pacific Region, 2010 (in percentage)



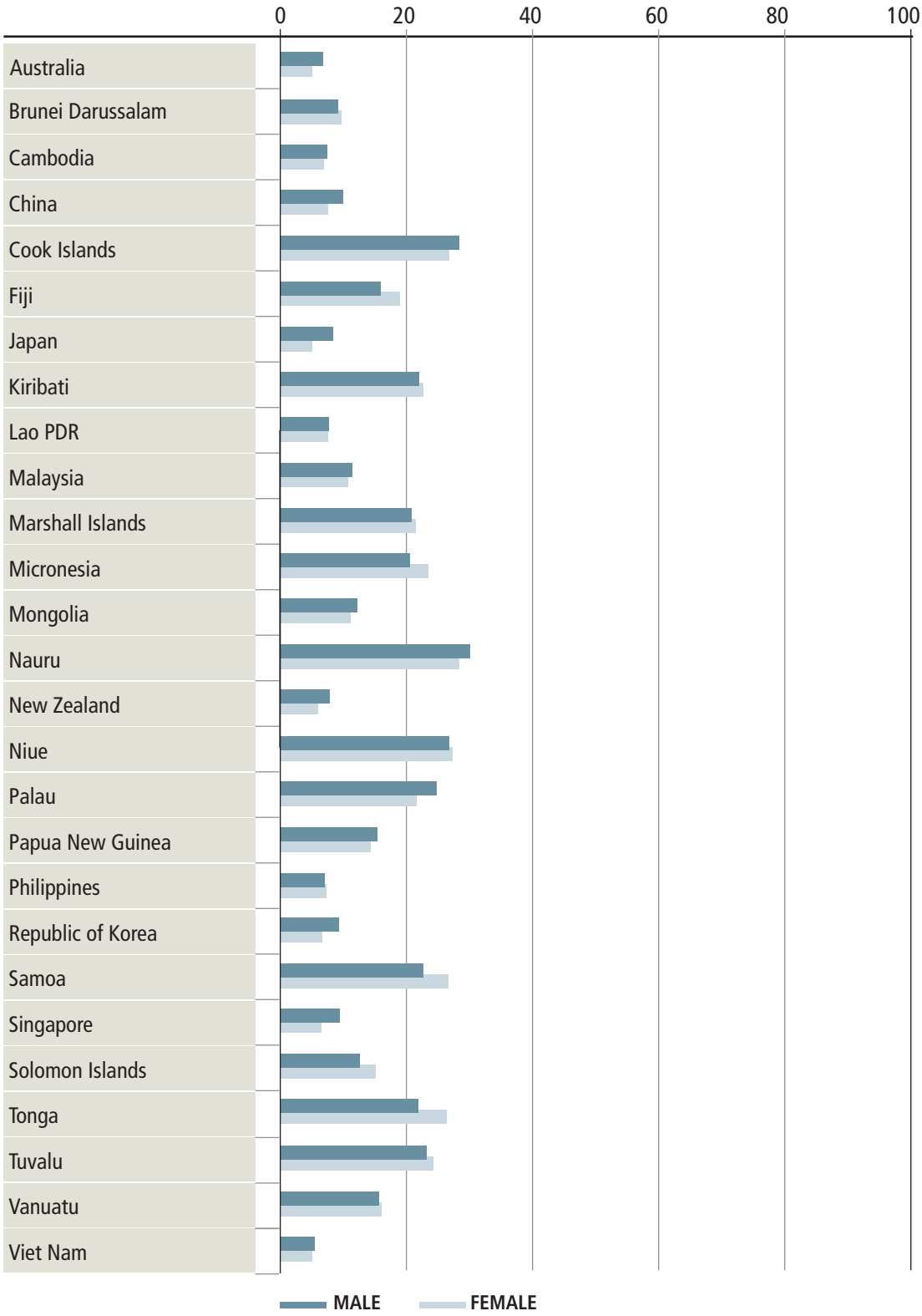
Source: Noncommunicable disease risk factors and socioeconomic inequalities – what are the links? A multicountry analysis of noncommunicable disease surveillance data. Manila: WHO Regional Office for the Western Pacific; 2010 (http://www.wpro.who.int/publications/docs/WHOSESFINALforupload.pdf, accessed Aug. 2018).

FIG. 50 Obesity, by income level, and sex, China and Malaysia, 2010 (in percentage)



Source: Noncommunicable disease risk factors and socioeconomic inequalities – what are the links? A multicountry analysis of noncommunicable disease surveillance data. Manila: WHO Regional Office for the Western Pacific; 2010 (http://www.wpro.who.int/publications/docs/WHOSESFINALforupload.pdf, accessed Aug. 2018).

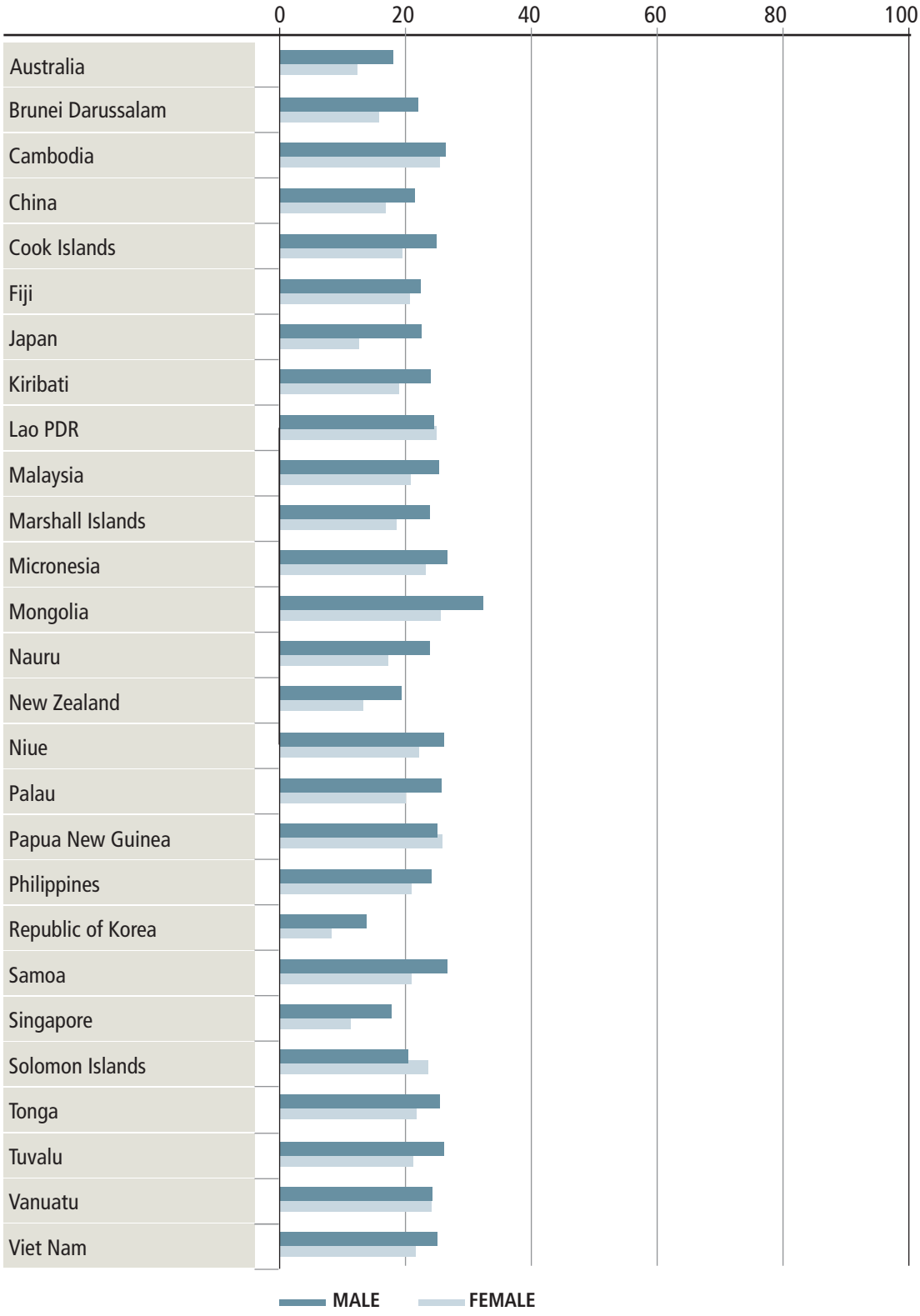
FIG. 51 Proportion of adults with raised fasting blood glucose (age-standardized estimate), by sex, selected countries in the Western Pacific Region, 2014 (in percentage)



Note: Percent of adult population with fasting glucose ≥126 mg/dl (7.0 mmol/l) or history of diagnosis with diabetes or use of insulin or oral hypoglycaemic drugs.

Source: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Aug. 2018).

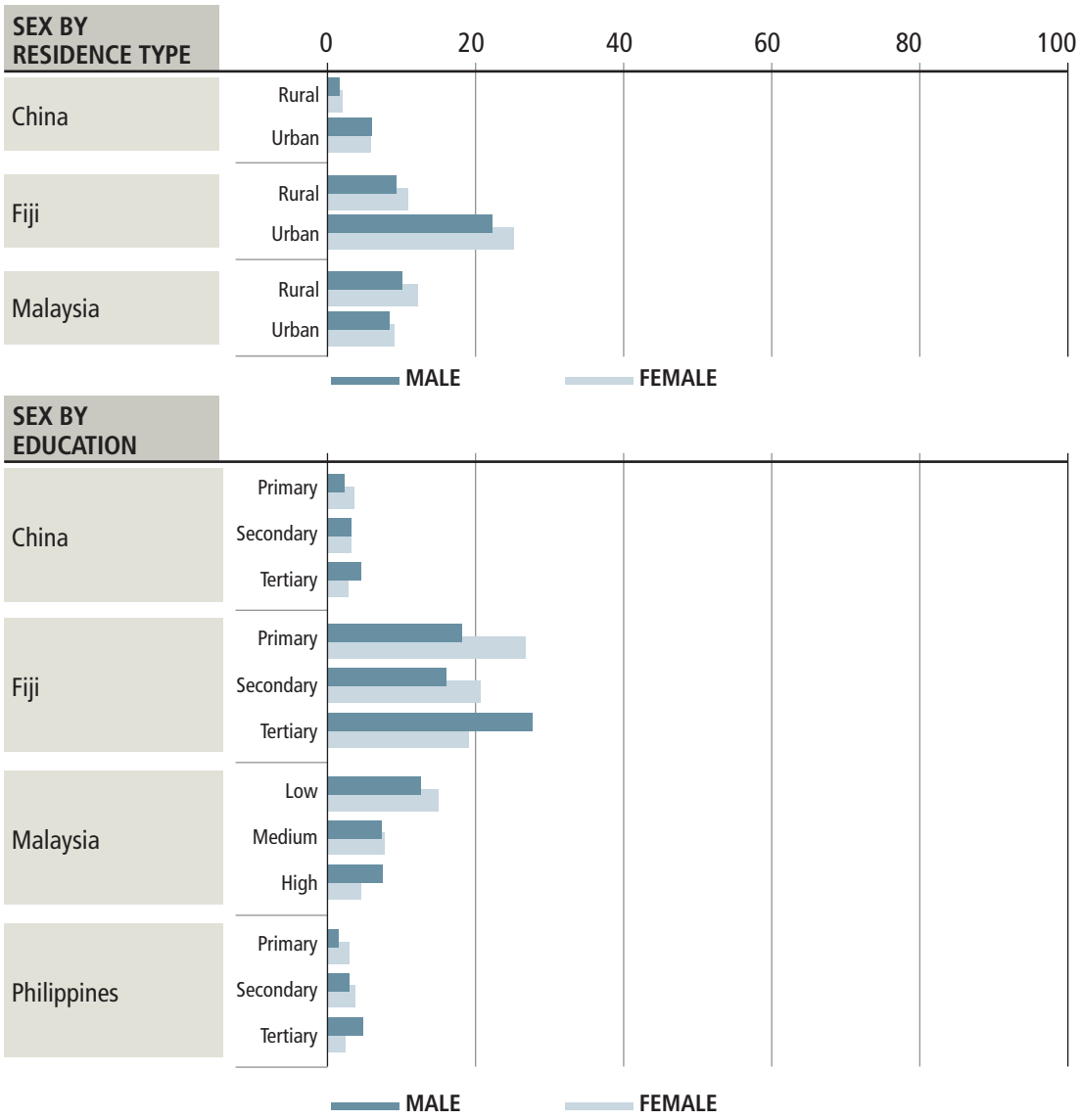
FIG. 52 Age-standardized prevalence of raised blood pressure, by sex, selected countries in the Western Pacific Region, 2015 (in percentage)



Note: Percent of adult population with raised blood pressure SBP ≥ 140 or DBP ≥ 90.

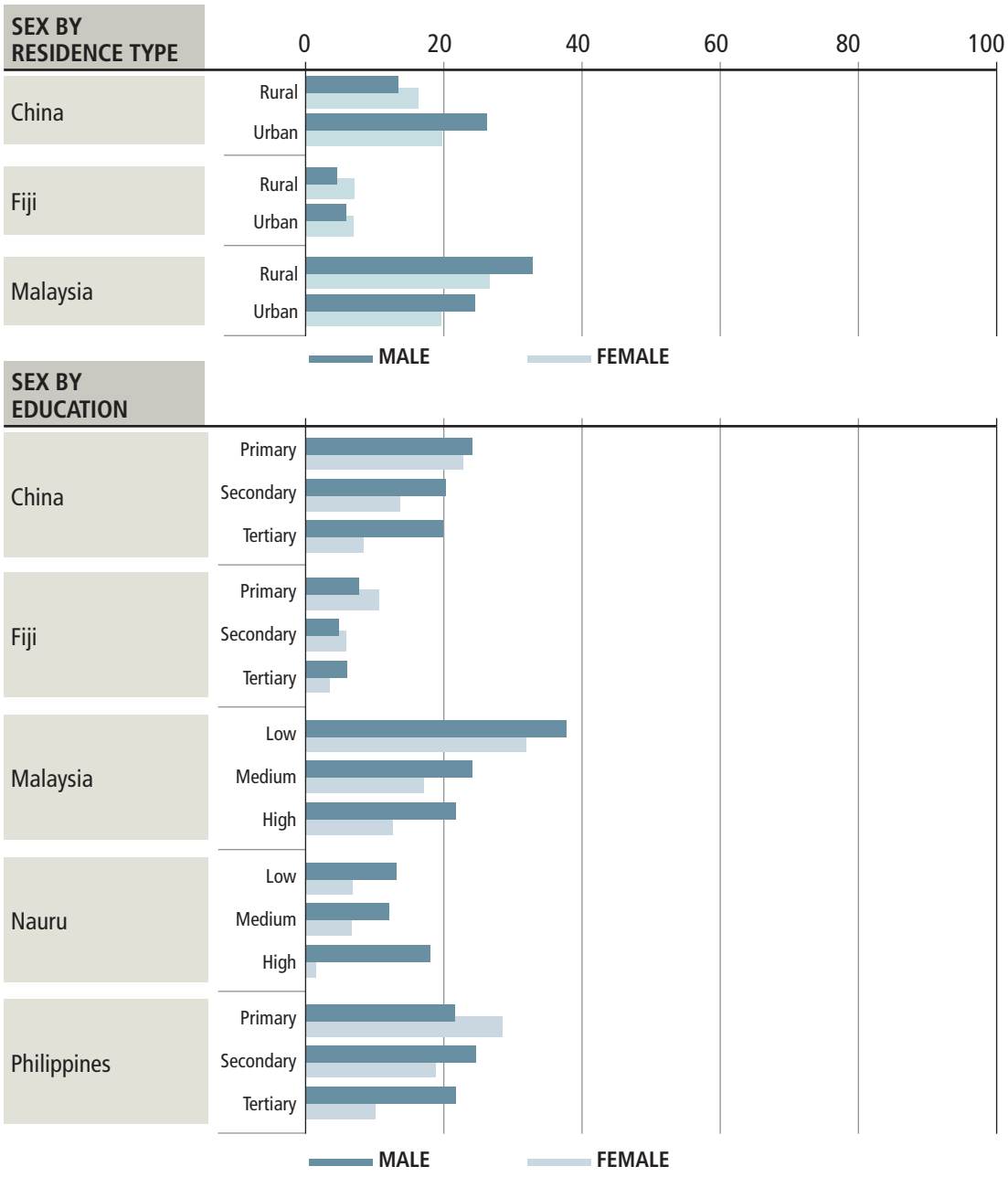
Source: Global Health Observatory Data Repository [online database]. World Health Organization (http://apps.who.int/gho/data/node.main.nHE-1540, accessed Aug. 2018).

FIG. 53 Prevalence of high blood glucose, by sex, residence and education, selected countries in the Western Pacific Region, 2015 (in percentage)



Source: Noncommunicable disease risk factors and socioeconomic inequalities – what are the links? A multicountry analysis of noncommunicable disease surveillance data. Manila: WHO Regional Office for the Western Pacific; 2010 (http://www.wpro.who.int/publications/docs/WHOSESFINALforupload.pdf, accessed Aug. 2018).

FIG. 54 Prevalence of raised blood pressure, by sex, residence and education, selected countries in the Western Pacific Region, 2010 (in percentage)



Source: Noncommunicable disease risk factors and socioeconomic inequalities – what are the links? A multicountry analysis of noncommunicable disease surveillance data. Manila: WHO Regional Office for the Western Pacific; 2010 (http://www.wpro.who.int/publications/docs/WHOSESFINALforupload.pdf, accessed Aug. 2018).

4 DIFFERENCES IN **SOCIAL** AND **ENVIRONMENTAL** DETERMINANTS

The material circumstances of communities and the societal structures in which people live are key determinants of health.

Drinking water, sanitation and hygiene

Inadequate or inappropriately managed water, sanitation and hygiene (WASH) services expose individuals to preventable health risks through the transmission of diseases such as cholera, diarrhoea, hepatitis A and typhoid. The mortality rate attributed to exposure to unsafe WASH services ranges from less than 0.1 deaths per 100 000 persons in Australia, Brunei Darussalam and Singapore to 16.7 deaths per 100 000 persons in Kiribati *(15)*.

Access to drinking water

Wide disparities exist in access to water across the Region. In Australia and New Zealand, access to safely managed drinking water is nearly universal. In other countries, access to at least basic drinking water (that is, requiring no more than 30 minutes per trip for collection) is patterned across urban/rural divides (Fig. 55), with those in urban areas more likely to have at least basic access to drinking water; those in rural areas are most likely to have limited drinking water supply (that is, requiring more than 30 minutes to collect water from an improved source). The proportion of the population drinking water directly from surface water sources such as rivers, lakes and irrigation canals is highest in rural Papua New Guinea, at 48%. Mirroring geographic inequities, there are also significant inequities in access to basic services between rich and poor. For example, people living in the poorest Cambodian households are 40% less likely to have access to at least basic drinking water supplies than those living in the richest households.

The WHO and UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene reports that, globally, women and girls are responsible for water collection in eight out of 10 households with water off premises *(16)*. As such, reducing the population with limited drinking-water services is an issue of gender equity.

FIG. 55 Proportion of the population with access to drinking-water, by wealth quintile and residence, selected countries in the Western Pacific Region, 2012–2014 (in percentage)

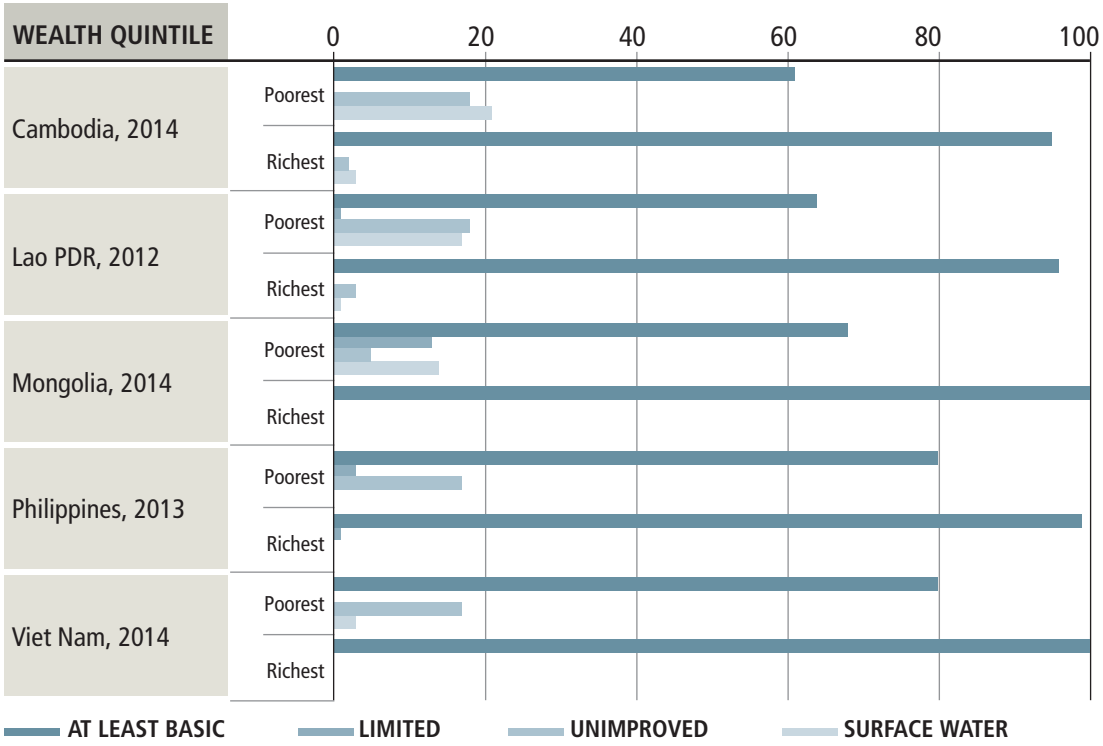
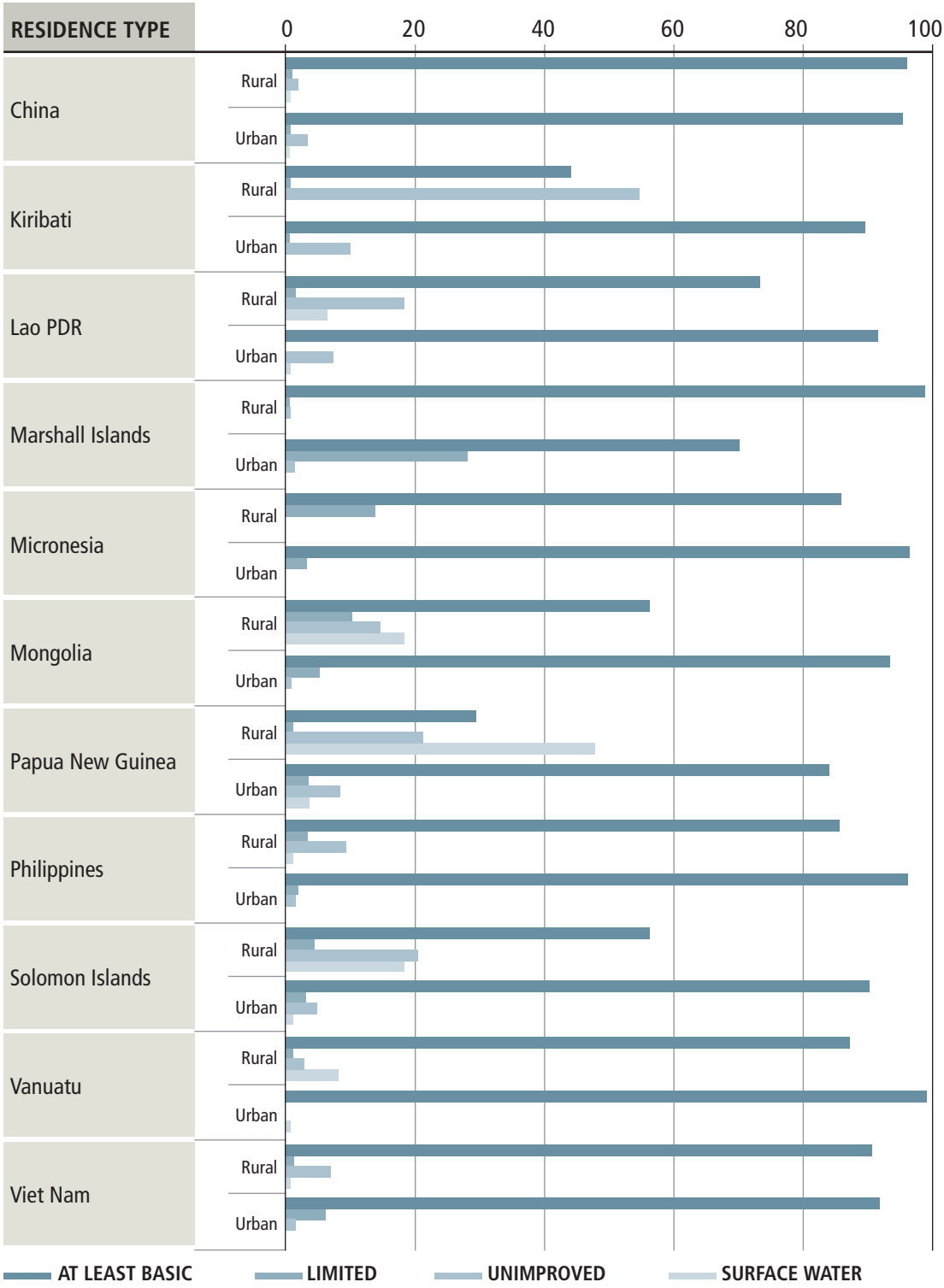


FIG. 55 Proportion of the population with access to drinking-water, by wealth quintile and residence, selected countries in the Western Pacific Region, 2015 (in percentage) *(continued)*



Source: WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene Estimates on the use of water, sanitation and hygiene by country (2000-2015); 2017 (https://washdata.org/data, accessed Aug. 2018).

Access to sanitation services

Coverage of sanitation services varies widely across the Region. Within countries, significant disparities exist between rural and urban areas and between rich and poor (Fig. 56). In all countries for which data are available, limited or unimproved sanitation services or open defecation are more common in rural areas (Fig. 56). In Cambodia, those living in the poorest households are 20 times more likely than the richest to practice open defecation.

The WHO and UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene reports that the Lao People's Democratic Republic, Viet Nam and Tokelau are on track for universal basic sanitation by 2030; however, progress is too slow in Cambodia *(16)*.

FIG. 56 Proportion of the population with access to sanitation facilities, by wealth quintile and residence, selected countries in the Western Pacific Region, 2014 (in percentage)

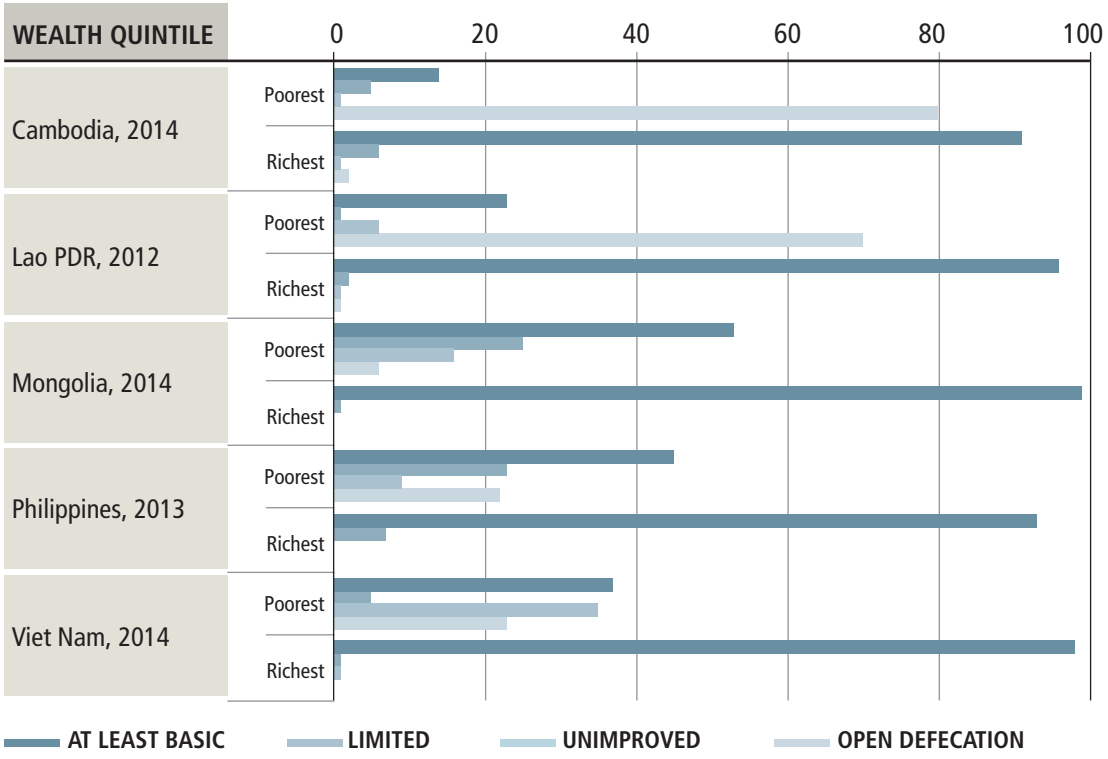
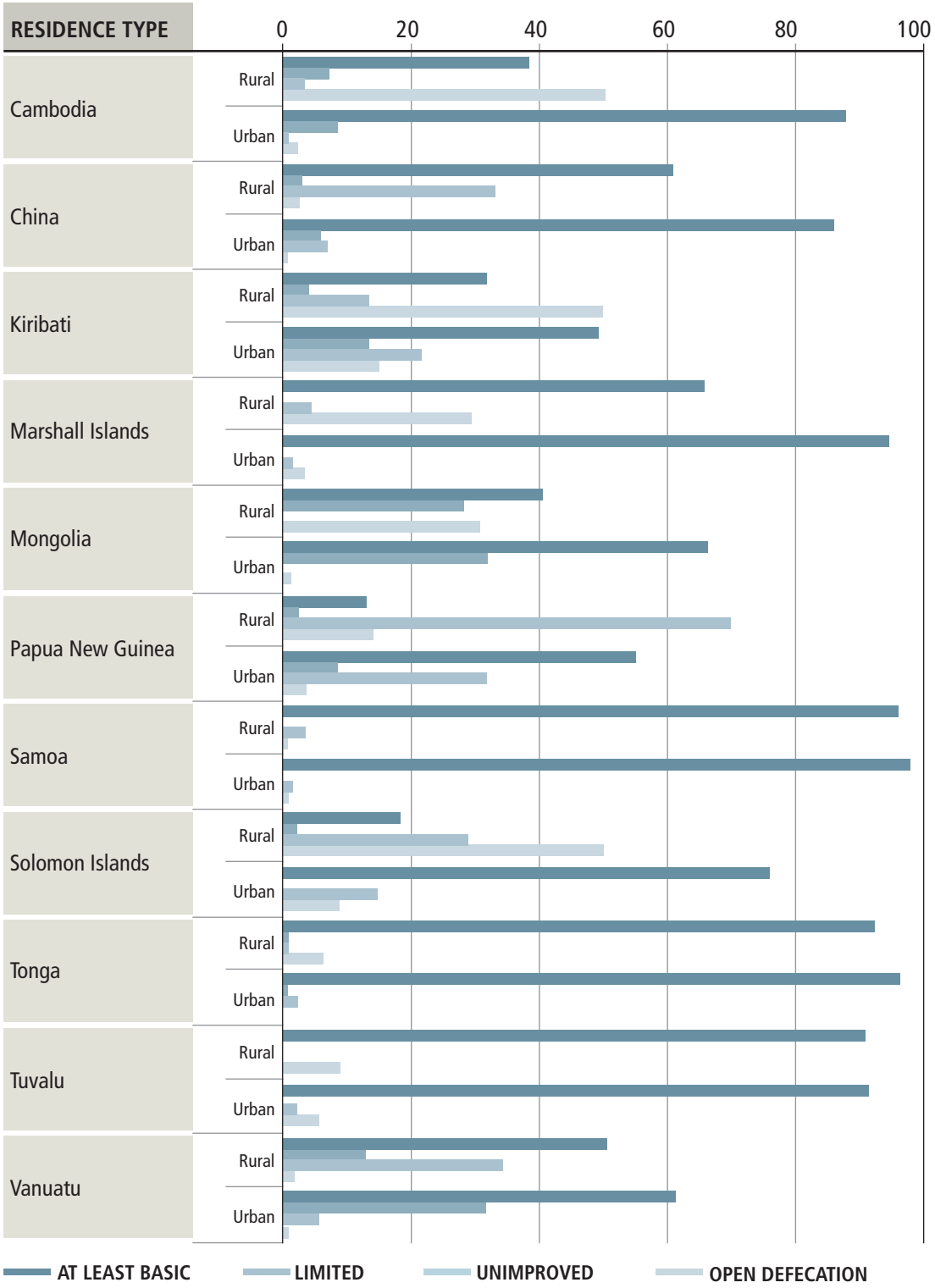


FIG. 56 Proportion of the population with access to sanitation facilities, by wealth quintile and residence, selected countries in the Western Pacific Region, 2014 (in percentage) *(continued)*

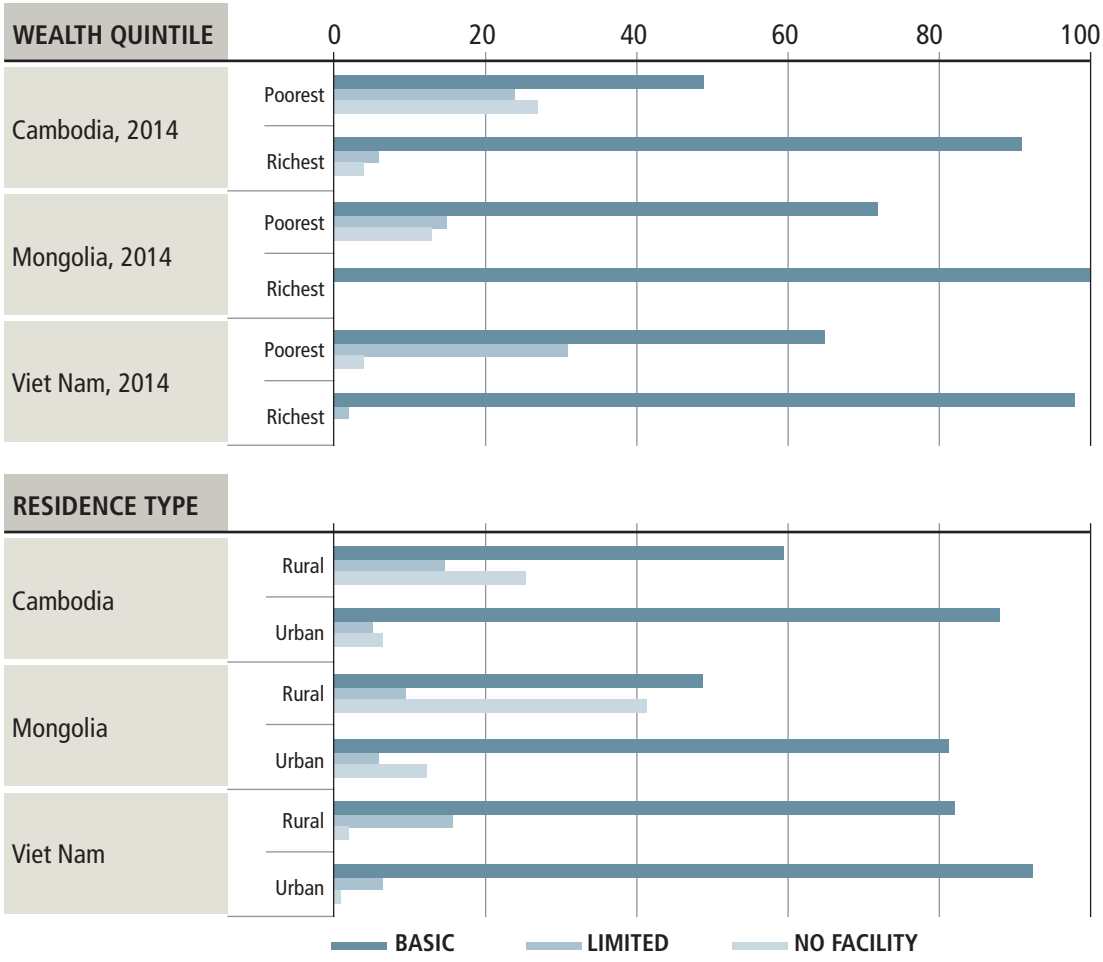


Source: WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene Estimates on the use of water, sanitation and hygiene by country (2000-2015); 2017 (https://washdata.org/data, accessed Aug. 2018).

Access to handwashing facilities

Data describing the coverage of handwashing facilities across the Region are limited. In those countries for which data are available, data show that access varies across urban–rural divides (Fig. 57). For example, fewer than 50% of people living in rural areas of Mongolia have access to basic handwashing facilities with soap and water, compared to 81% in urban areas. Wide disparities are apparent between rich and poor (Fig. 57). For example, in Cambodia, those in the richest households are almost twice as likely as those living in the poorest households to have access to basic handwashing facilities.

FIG. 57 Proportion of the population using handwashing facilities, by wealth quintile and residence, selected countries in the Western Pacific Region, 2015 (in percentage)



Source: WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene Estimates on the use of water, sanitation and hygiene by country (2000-2015); 2017, (https://washdata.org/data, accessed Aug. 2018).

Violence, exploitation and trafficking

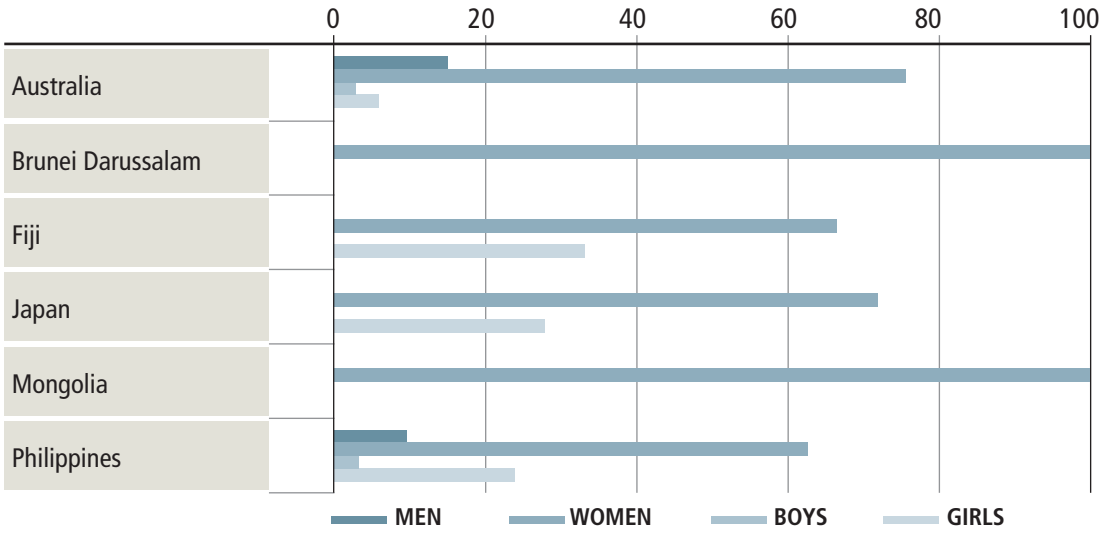
The Sustainable Development Goals call for the promotion of peaceful and inclusive societies for sustainable development and providing access to justice for all. Violence is specifically addressed in two goals – SDG5 and SDG16. Advancing this agenda will necessarily entail ending human trafficking, and reducing the burden of violence against women and girls and violence against children.

Human trafficking

Globally, children make up almost a third of human trafficking victims, and 71% of human trafficking victims are women and girls *(17).* Many factors can increase a person's vulnerability to human trafficking, with people escaping from war and persecution particularly vulnerable.

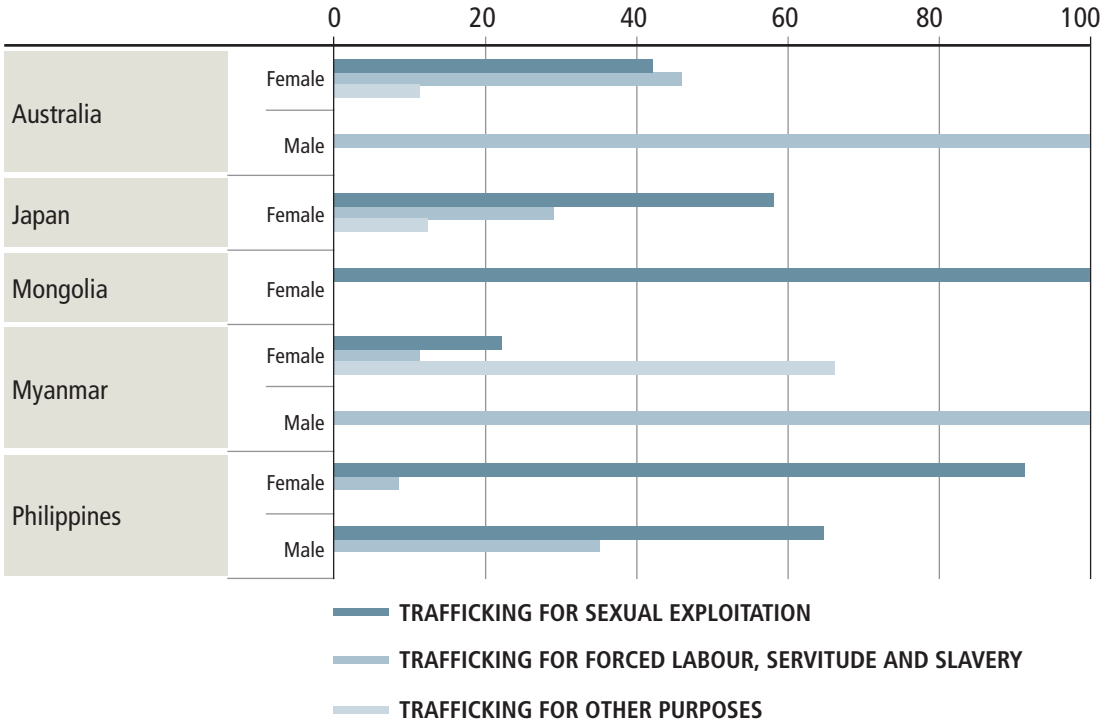
Of the 1022 victims detected in the Western Pacific Region in 2014, most were women and girls (Fig. 58). Most (79%) female victims in Region were trafficked for sexual exploitation, whereas men were more likely to be trafficked for forced labour (Fig. 59). These Regional trends mask marked variations between countries.

FIG. 58 Detected victims of trafficking, by age and sex, selected countries in the Western Pacific Region, 2014 (in percentage)



Source: UNODC Global Report on Trafficking in Persons. United Nations Office on Drugs and Crime (http://www.unodc.org/unodc/data-and-analysis/glotip.html, accessed Aug. 2018).

FIG. 59 Detected victims of trafficking by sex and type/ form of exploitation, selected countries in the Western Pacific Region, 2014 (or most recent) (in percentage)



Source: UNODC Global Report on Trafficking in Persons. United Nations Office on Drugs and Crime (http://www.unodc.org/unodc/data-and-analysis/glotip.html, accessed Aug. 2018).

Women subjected to physical and/or sexual violence

Violence against women and girls is a significant public health problem, and a fundamental human rights violation. Rooted in gender inequality, violence may be perceived in some settings as an acceptable component of interpersonal dynamics, particularly in the context of marriage, intimate partnerships or other formal unions. Reducing the prevalence of intimate partner violence against women is therefore a proxy for gender inequality, as well as an important outcome in its own right *(18).*

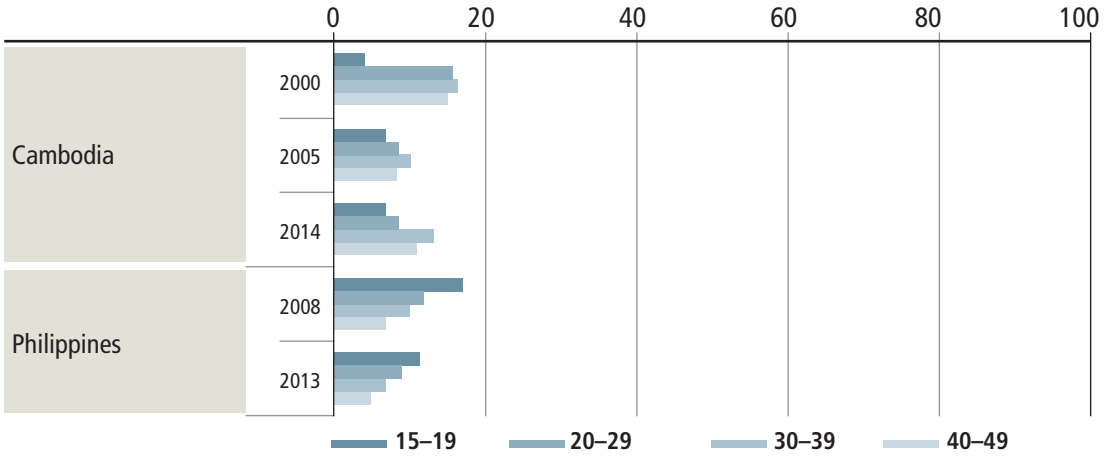
Many WHO Member States in the Western Pacific Region are taking impressive steps to strengthen information on and respond to violence against women and girls in collaboration with partners. In the past 15 years, the WHO methodology for the measurement of violence against women has been implemented in many countries and settings in the Region. These national studies and similar research are a strong sign of political commitment of governments and provide valid data as the basis for sound policy and action. It is worth noting that the prevalence of violence against

women differs markedly across countries and settings in the Western Pacific Region. Estimates show that the proportion of women experiencing current physical violence (that is, within the 12 months prior to survey) by an intimate partner varied from less than 1% in Singapore and Hong Kong SAR (China) to over 30% in Kiribati and Vanuatu. The proportion of women experiencing current sexual violence differed from 0.1% in Singapore to 43% in Solomon Islands.

Global analysis of the sociodemographic patterning of violence against women has shown that younger ever-partnered women are at higher risk of experiencing physical or sexual violence by an intimate partner, with differences between age groups tending to be more pronounced in the cities than in rural areas *(19).* Disaggregated data for the Western Pacific Region are limited with available data showing that the age profile of survivors differs between countries. In the Philippines, women aged 15–19 were most likely to experience spousal physical or sexual violence, while in Cambodia women in their thirties were at highest risk (Fig. 60).

The prevalence of women experiencing physical or sexual violence differed by level of education and wealth quintile in Cambodia, with the poorest women and those with no education most likely to be a victim of spousal violence. In the Philippines, the impact of wealth and education was less pronounced, although higher education and household wealth appear to be protective (Fig. 61).

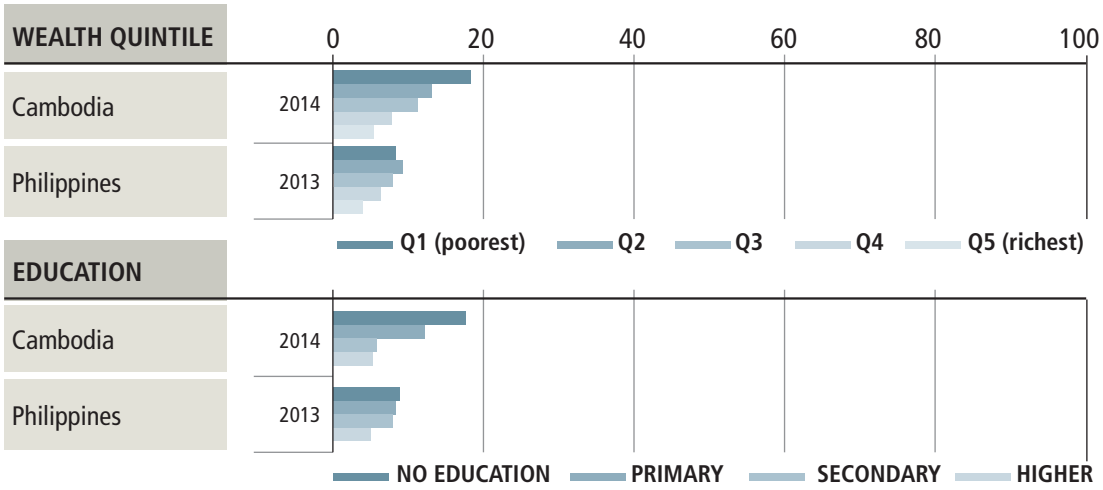
FIG. 60 Proportion of women aged 15–49 years who experienced physical or sexual violence committed by husband/partner in past 12 months, by age, Cambodia and Philippines in the Western Pacific Region, various years (in percentage)



Note: Percentage of ever married women who have experienced physical or sexual violence committed by their husband/partner in the 12 months preceding the survey.

Source: The DHS Program [website]. United States Agency for International Development (http://dhsprogram.com, accessed Aug. 2018).

FIG. 61 **Proportion of women aged 15–49 years who experienced physical or sexual violence committed by husband/partner in past 12 months, by wealth quintile and education, Cambodia and Philippines, various years (in percentage)**



Note: Percentage of ever married women who have experienced physical or sexual violence committed by their husband/partner in the 12 months preceding the survey.

Source: The DHS Program [website]. United States Agency for International Development (http://dhsprogram.com, accessed Aug. 2018).

FIG. 62 **Attitudes towards wife beating, by sex, wealth quintile and residence, selected countries in the Western Pacific Region, various years (in percentage)**

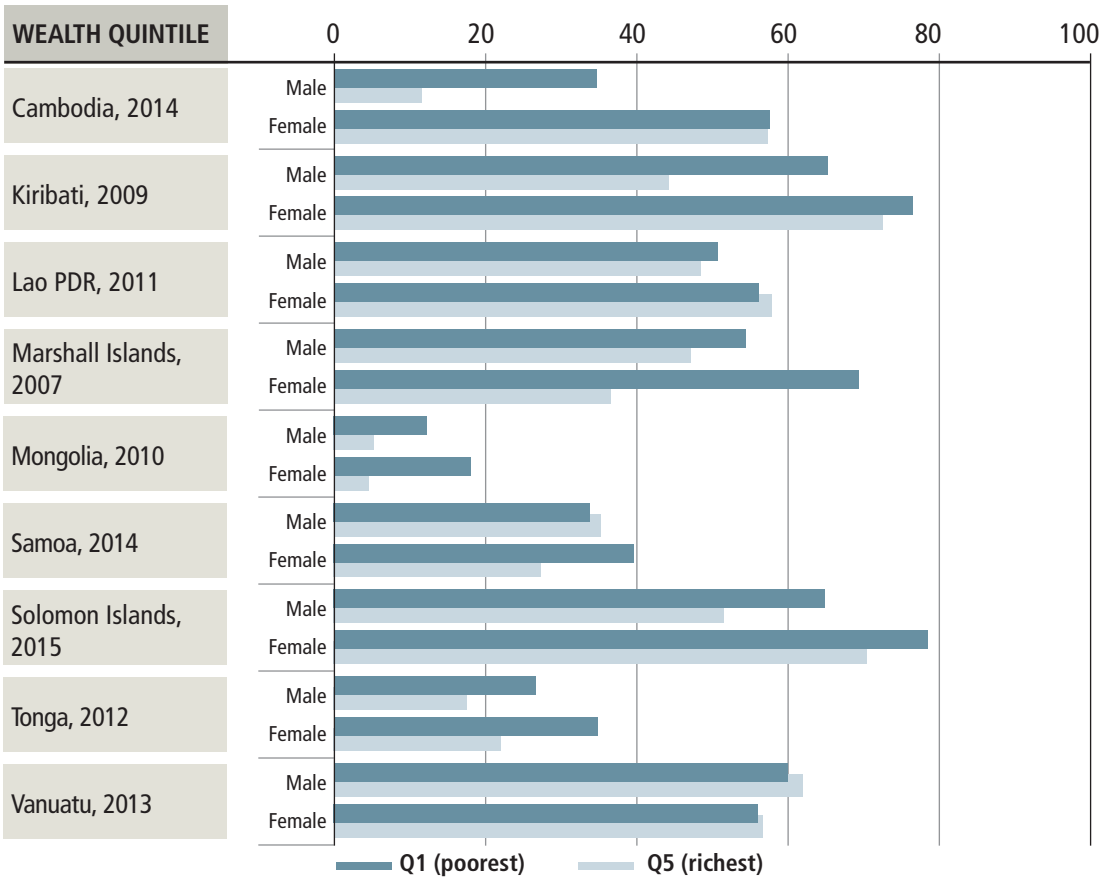
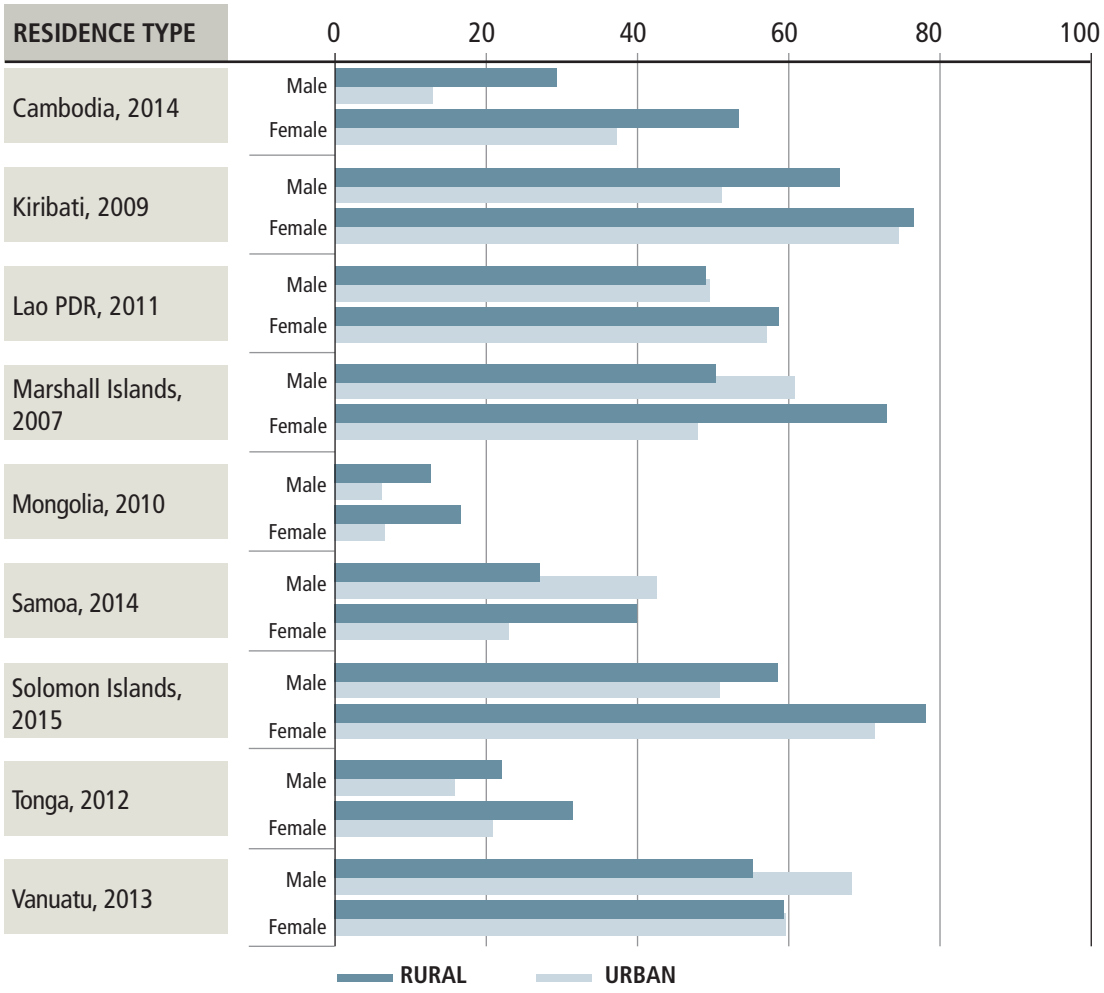


FIG. 62 Attitudes towards wife beating, by sex, wealth quintile and residence, selected countries in the Western Pacific Region, various years *(in percentage) (continued)*



Note: Percentage of persons 15–49 years old who consider a husband to be justified in hitting or beating his wife for at least one of the specified reasons, that is, if his wife burns the food, argues with him, goes out without telling him, neglects the children or refuses sexual relations.

Source: UNICEF Global Databases 2017 [online database]. United Nations Children's Fund (data.unicef.org, accessed Aug. 2018).

Attitudes regarding violence differed according to residence and social position (Fig. 62). Among both men and women, those living in rural areas and those in the poorest wealth quintile were more likely to believe that a husband is justified in hitting or beating his wife for reasons including: if his wife burns food; argues with him; goes out without telling him; neglects the children; or refuses sexual relations. In most countries for which data are available, a marginally higher proportion of women than men considered wife-beating justified.

Children subjected to violent discipline

Violence against children is another important health challenge in the Region. One form of violence against children is violent discipline, both physical and psychological. In the Western Pacific Region, the prevalence of violent discipline of children varies. In some countries, boys were marginally more likely to experience violent discipline than girls (Fig. 63). Differences in violent discipline were apparent between rural and urban areas, and between rich and poor (Fig. 63).

FIG. 63 **Percentage of children aged 1–14 years who experience any violent discipline (psychological aggression and/or physical punishment), by wealth quintile, residence and sex, selected countries in the Western Pacific Region, various years**

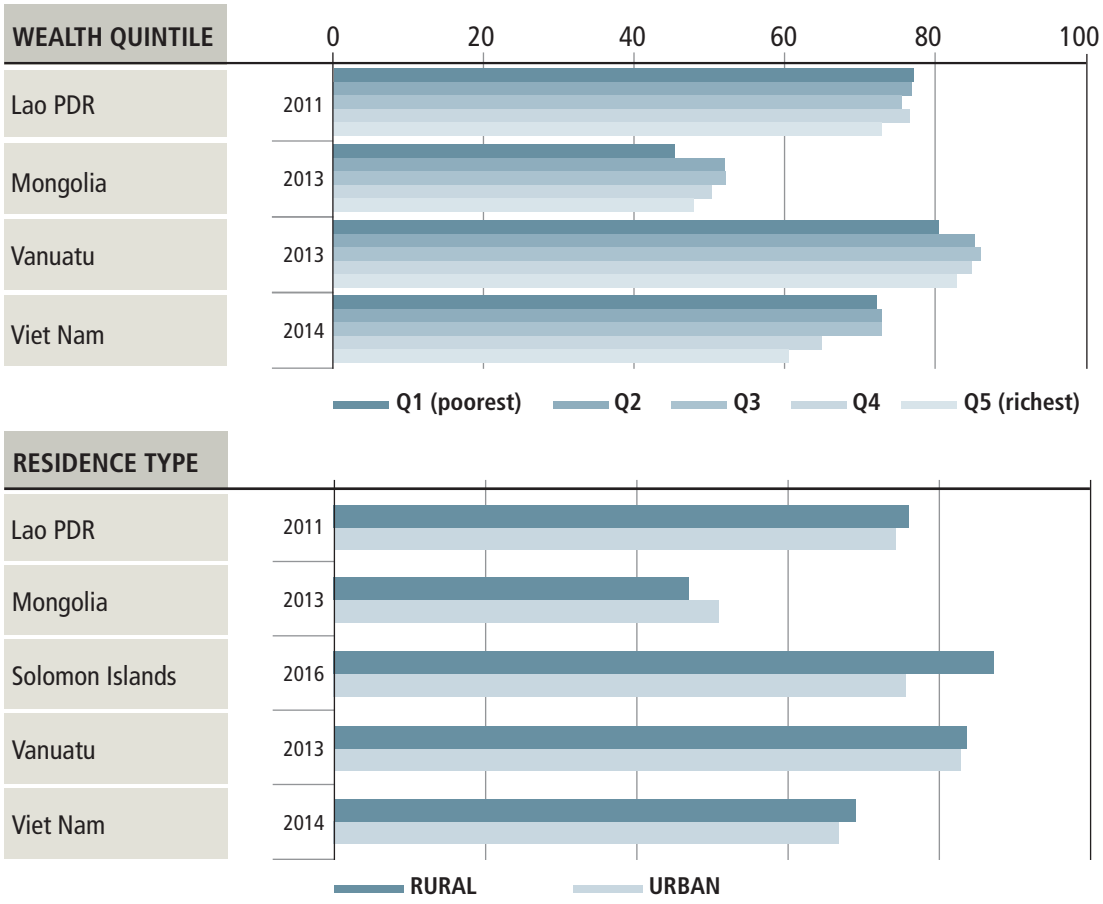
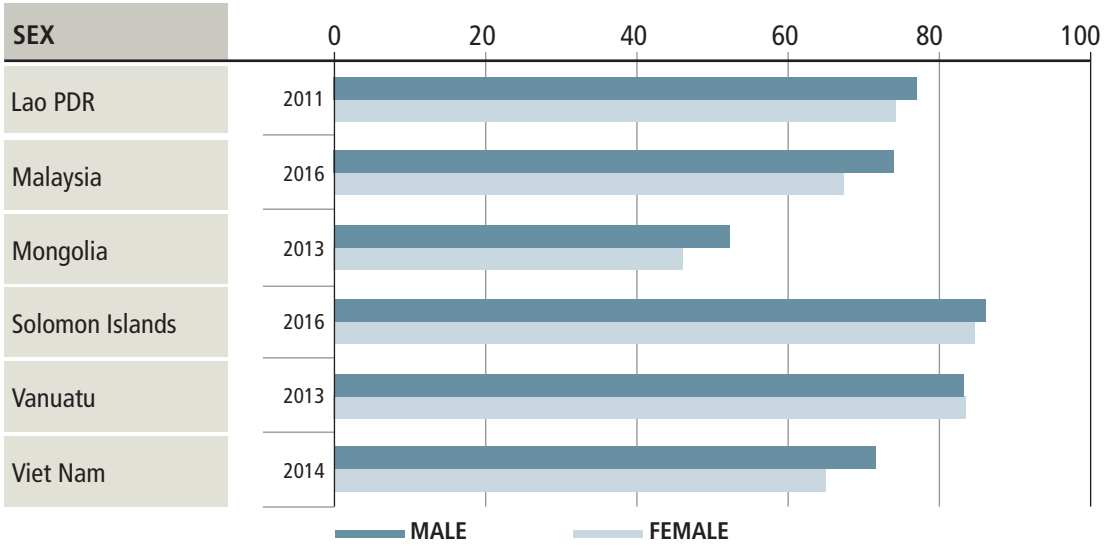


FIG. 63 Percentage of children aged 1–14 years who experience any violent discipline (psychological aggression and/or physical punishment), by wealth quintile, residence and sex, selected countries in the Western Pacific Region, various years *(continued)*



Source: UNICEF Global Databases 2017 [online database]. United Nations Children's Fund (data.unicef.org, accessed Aug. 2018).

5 DIFFERENCES IN **SOCIAL, POLITICAL** AND **ECONOMIC** CONTEXTS

Birth registration

Birth registration is a first step towards safeguarding individual rights. Many countries have reached universal or near, universal birth registration. However, there are marked differences across the Western Pacific Region, with fewer than half of children aged under 5 years in Vanuatu (43.4%) and Tuvalu (49.9%) having their births registered.

Generally, there is minimal difference in rates of birth registration between boys and girls across the Region (Fig. 64). In some countries, babies born to families living in rural areas are less likely to have their births registered (Fig. 64). Rates of birth registration are 60% higher in urban areas of Tuvalu compared with rural areas, while in urban Vanuatu

FIG. 64 **Percentage of children aged under 5 years whose births are registered, by wealth quintile and residence, selected countries in the Western Pacific Region, various years (in percentage)**

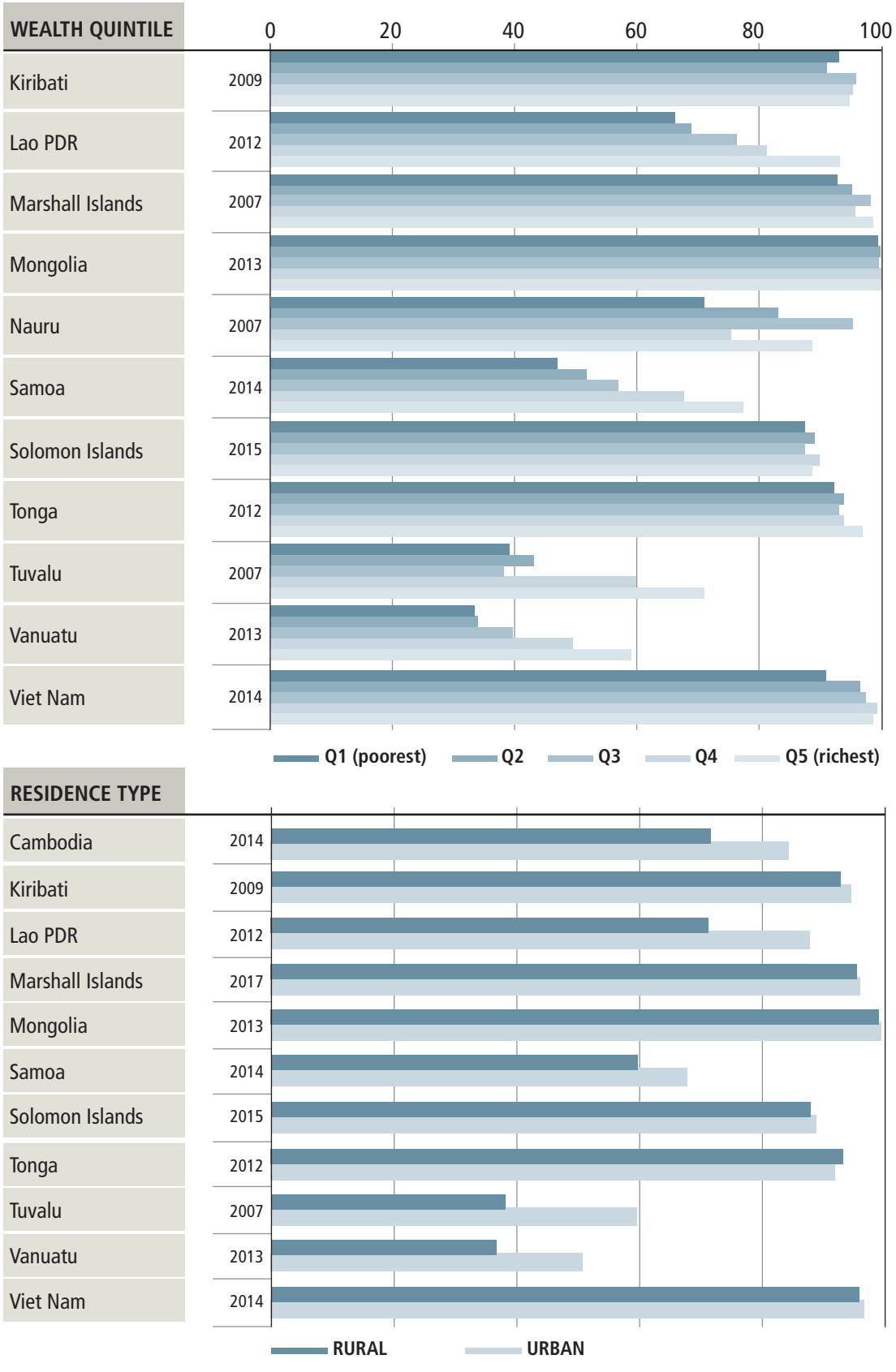
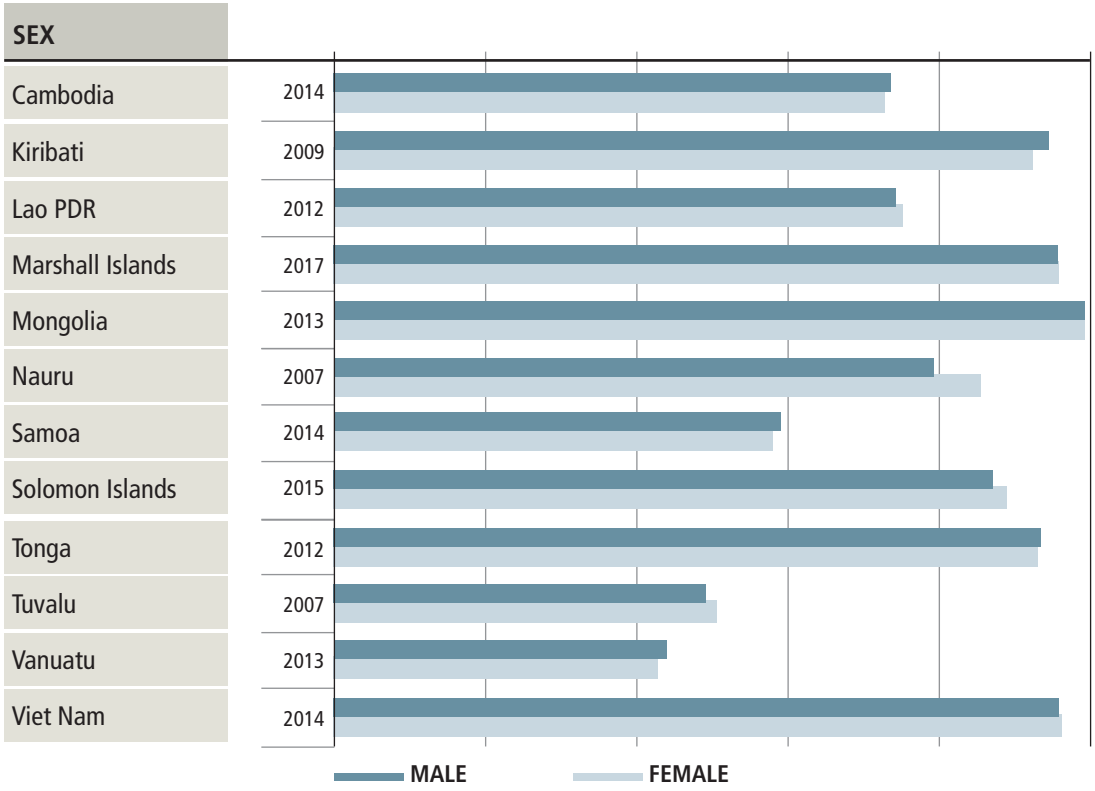


FIG. 64 Percentage of children aged under 5 years whose births are registered, by wealth quintile and residence, selected countries in the Western Pacific Region, various years *(continued)*



Note: Percentage of children aged under 5 years whose birth were reported to be registered at time of survey.

Source: UNICEF Global Databases 2017 [online database]. United Nations Children's Fund (data.unicef.org, accessed Aug. 2018).

registration rates are 40% higher than in rural areas. In both Tuvalu and Viet Nam, birth registration rates are 80% higher among children born to rich families compared to those who are poor (Fig. 64). In contrast, birth registration rates in Mongolia are near universal.

Social protection

Social protection is important for reducing vulnerabilities to poverty and is therefore an important upstream determinant of health. The International Labour Organization (ILO) includes the following as minimum social security guarantees: essential health and maternity care; sickness benefits; and protections for children, maternity, disability, unemployment and old age *(20)*. According to the ILO, the most common types of social protection implemented globally are labour market interventions to promote employment and protect workers, social insurance such as health or unemployment insurance, and social assistance to support vulnerable individuals or households.

Access to adequate social protection is enshrined in the Universal Declaration of Human Rights as a basic right. In practice, however, the coverage of social protection programmes differs between countries and between social groups. In most countries in the Western Pacific Region, coverage of social assistance tends to be higher in rural areas and among the poorest quintile (Fig. 65). Social insurance coverage, however, tends to favour those in wealthier quintiles and in urban areas (Fig. 65). Patterning of labour market coverage differs by country (Fig. 65). In Viet Nam, coverage is greatest among those in the poorest quintile in rural areas. In Mongolia, coverage is greatest among the urban poor.

FIG. 65 Coverage of social protection programmes, by wealth quintile and residence, selected countries in the Western Pacific Region, various years (in percentage)

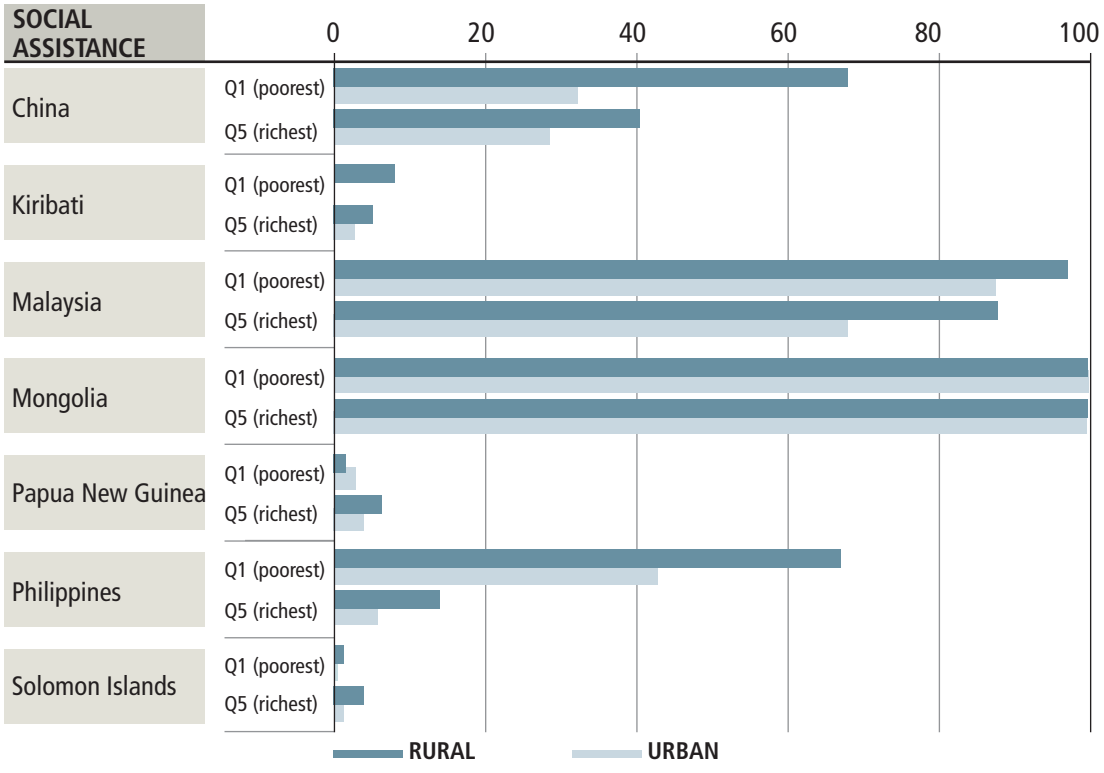
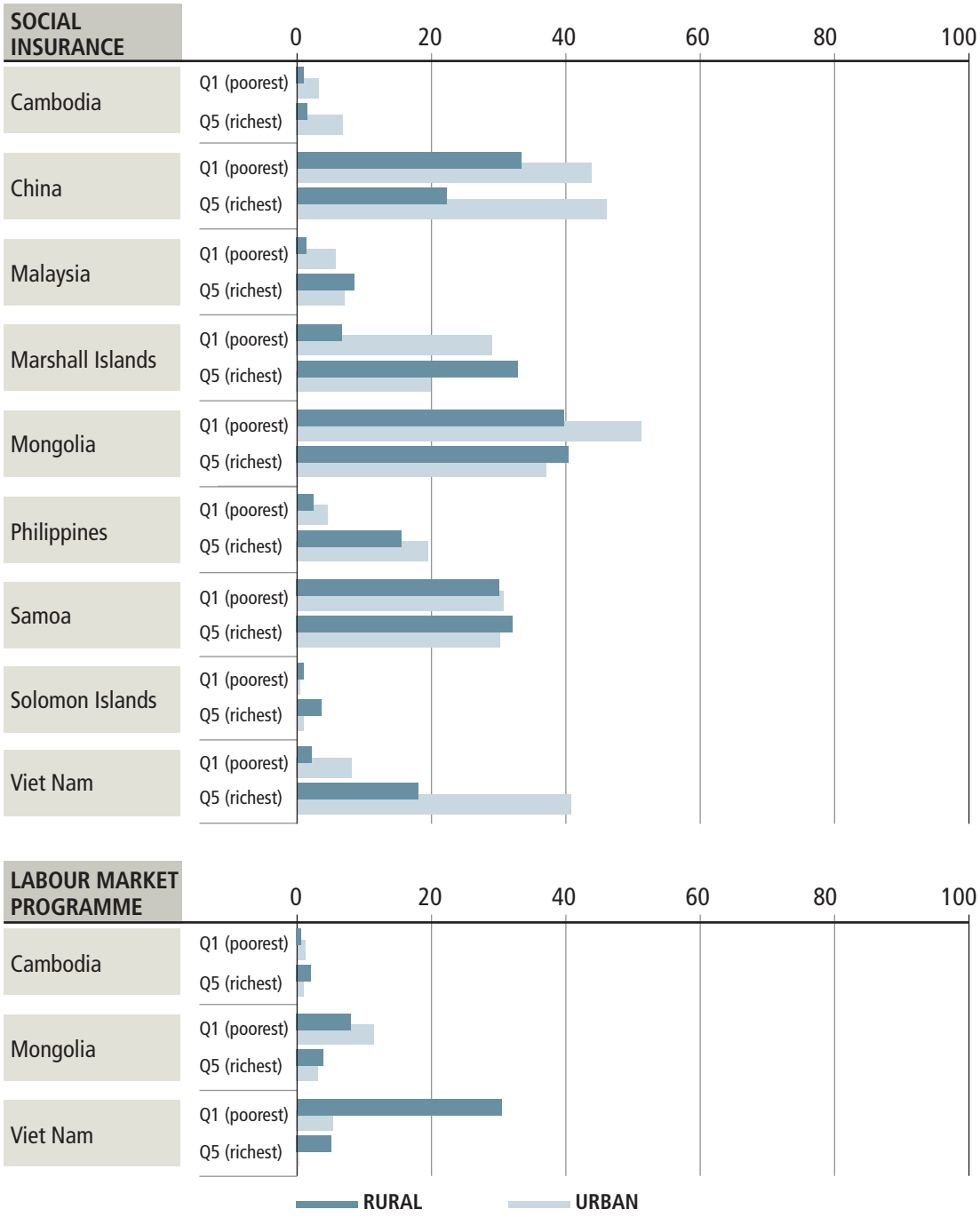


FIG. 65 Coverage of social protection programmes, by wealth quintile and residence, selected countries in the Western Pacific Region, various years (in percentage) *(continued)*



Note: Coverage is number of individuals in the quintile who live in a household where at least one member receives the transfer (number of individuals in that quintile).

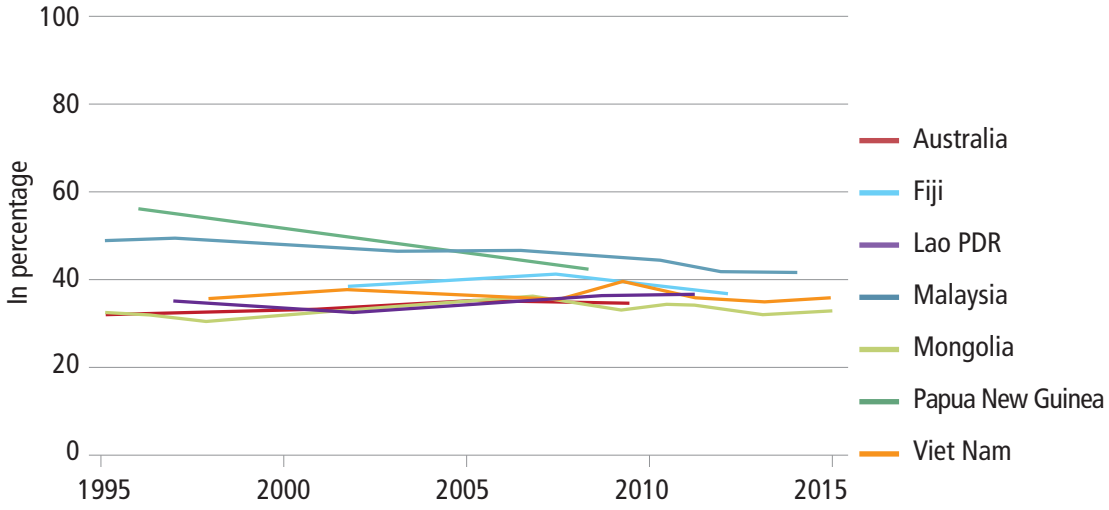
Source: The Atlas of Social Protection: Indicators of Resilience and Equity, data in: World Bank DataBank [online database]. World Bank (http://databank.worldbank.org/data/reports.aspx?source=1229, accessed Aug. 2018).

Macro socioeconomic factors

Macro socioeconomic inequities influence the material circumstances that drive health inequities as well as economic and educational opportunities. The GINI coefficient measures the degree of income inequality within countries. While decreasing inequality was evident in most countries in the Western Pacific Region from 1995 to 2016, slight increases were evident in Australia and the Lao People's Democratic Republic, while the index remained stagnant in the Republic of Korea, Viet Nam and Tonga (Fig. 66).

The international poverty line is currently defined at US$ 1.90 or below per person per day, according to 2011 United States dollars purchasing power parity (PPP). Poverty tends to interact with other types of social exclusion including on the basis of gender, ethnicity, race, age or geographical location, and can thereby have profound health and social consequences. Since 2002, there have been marked reductions in the proportion of the population living below the poverty line in countries across the Western Pacific Region (Fig. 67). In China for instance, the proportion of the population living below US$ 1.90 per day has reduced from 31.9% in 2002 to 0.7% in 2015. As of 2013, Solomon Islands has the highest proportion of people living in poverty at 25.1%.

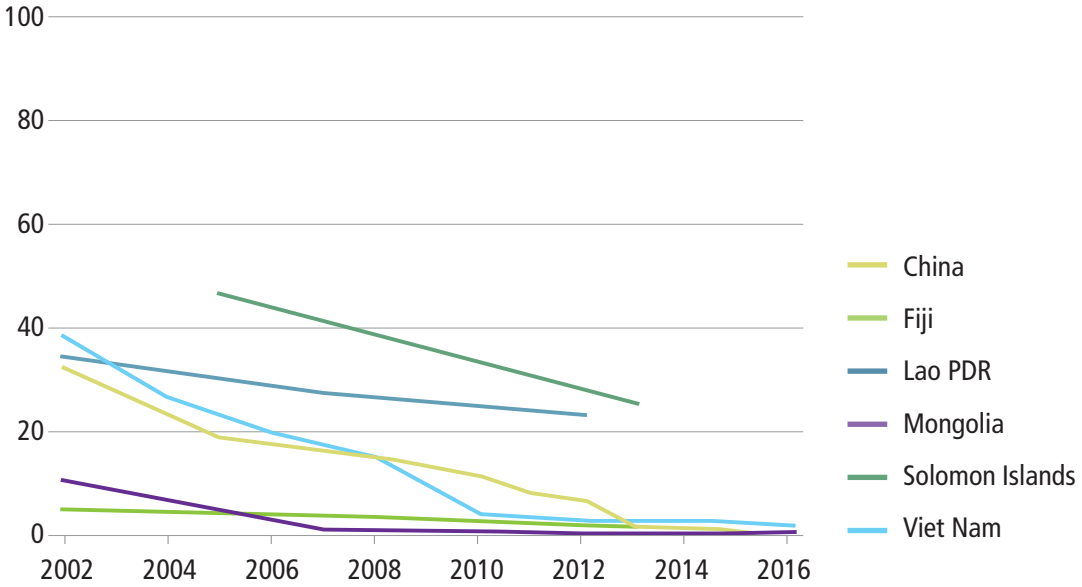
FIG. 66 GINI coefficient index, selected countries in the Western Pacific Region, 1995–2016



Note: The GINI index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Lorenz curve plots the cumulative percentages of total income received against the cumulative number of recipients, starting with the poorest individual or household. The GINI index measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. Thus, a GINI index of 0 represents perfect equality, while an index of 100 implies perfect inequality.

Source: World Bank Development Research Group, data in: World Bank DataBank [online database]. World Bank (https://data.worldbank.org/indicator/si.pov.gini, accessed Sept. 2018).

FIG. 67 Percentage of population living below the international poverty line, PPP US$ 1.90 (poverty headcount ratio), selected countries in the Western Pacific Region, 2002–2016



Source: World Bank Poverty and Equity Database, data in: World Bank DataBank [online database]. World Bank (https://data-catalog.worldbank.org/dataset/poverty-and-equity-database, accessed Sept. 2018).

6 MAKING INEQUITY VISIBLE: **DATA GAPS** AND **CHALLENGES**

Health equity monitoring is a complex process dependent on appropriate data resources, infrastructure and governance, with well-documented challenges *(4,21,22)*. These include: gaps in data collection and availability; insufficiently disaggregated data; poor data quality and reliability; fragmented health information systems; limited use of information standards and exchange mechanisms; and poor information infrastructure and tools. In particular, the intersectoral nature of equity monitoring poses complexities as health information systems need to cut across jurisdictional silos to monitor both health and dimensions of inequity.

Across the Western Pacific Region, capabilities and priorities for health equity monitoring differ according to countries' characteristics and challenges. For many countries, there are insufficient data to report against health-related The Sustainable Development Goals (SDGs) and universal health coverage indicators at the national aggregate level,

let alone to disaggregate by equity stratifiers to identify those groups being left behind. These findings support an analysis by the United Nations Statistical Commission, which found that existing data systems are generally insufficient to assess progress towards equity in the Sustainable Development agenda *(23).* It is vital that countries commit to improving collection of disaggregated health data, rather than simply reporting in aggregate form. Without disaggregated data, monitoring the breadth and depth of within-country and regional inequities and progress towards the SDGs is not possible.

Monitoring progress to improve equity in relation to RMNCH has received more sustained attention than monitoring of the distribution of health and its determinants across the lifespan. Many health process and outcome datasets are biomedically focused, with limited ability to disaggregate beyond sex to identify social inequities in health. However, this has limited existing analysis. For example, biology alone cannot explain gender disparities in health. Moreover, women and men are not homogeneous groups, but are divided along lines of age, class, geography, ethnicity and other facets of identity. Where data limitations exist, qualitative research and local knowledge about gendered differences in health attitudes and behaviours, exposures to risk, and interactions with health systems can serve as a starting point for improved monitoring of inequity and to inform equity-oriented policy development.

For many of the health indicators presented in this report, marked disparities along geographic, social and gender dimensions were apparent. The inability to refine analysis using multiple stratification to examine interactions between different dimensions of social identity limits the utility of the analysis as a foundation for policy responses. For instance, policies seeking to improve health-care access among poor communities may be only partially responsive to barriers without accounting for differences in circumstances between urban and rural poor. Relatedly, enhancing national, regional and international agency data systems to facilitate multiple stratification of health data would increase the utility of these resources.

Household surveys are an important source of health data for equity analysis. Surveys including the Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) collect a range of information about health and social circumstances, and occur regularly to facilitate monitoring over time. However, surveys often target particular population groups or health issues. In the Western Pacific Region, this has meant that relatively good data exist for monitoring inequities in reproductive, maternal, newborn and child health in some countries, but a lacuna exists in knowledge about the inequitable distribution of health across the lifespan and population. With the available regional data showing persistent gender inequities in health risk factors and outcomes facing men, for instance, additional sources of data to facilitate monitoring of the social, economic, environmental, political and cultural determinants of health for both men and women would improve knowledge about equity in the Region.

Survey data are also impeded by statistical limitations as large sample sizes are required to facilitate sensitive equity monitoring. Adding too many levels of disaggregation compromises the statistical power of survey data, particularly for low-prevalence conditions or where subpopulations of interest for equity monitoring comprise a relatively small population proportion. As such, estimates for equity monitoring may be uncertain and the ability to make valid comparisons between subgroups may be hindered.

Administrative health and vital statistic and disease notifications are valuable sources of data that could be amenable to equity analysis, particularly by sex and geographic stratifiers. However, many health process and outcome datasets that are derived from these sources, including those which could be used to monitor progress towards universal health coverage, are biomedically focused, belying sociodemographic variations in health. Morbidity datasets, for instance, do not record basic demographic stratifiers (such as sex, area of residence) even where original data collections are likely to make such distinctions. Improving routine data collection systems to facilitate equity analysis could help address data gaps. For instance, retaining routinely-collected patient sex and age characteristics and hospital geographic catchment information in hospitalizations datasets could provide a foundation for within-country comparative equity analyses.

Alternatively, equity monitoring may be facilitated by selecting tracer indicators to support monitoring of equitable progress towards the SDGs at an aggregate level. The 36 indicators proposed by the Working Group for Monitoring Action on the Social Determinants of Health to monitor equity in health and its determinants across health systems and the life course may provide a foundation *(24).*

CONCLUSIONS

The findings presented in this report provide a foundation for action on the health equity agenda and for improved monitoring of progress on universal health coverage and the SDGs. During the Millennium Development Goal era, Member States of the Western Pacific Region made impressive progress in health. There is now an opportunity to build on these achievements, advance the Sustainable Development Goal agenda and leave no one behind.

Much of the burden of disease and premature death across the Western Pacific Region is avoidable, with the available data revealing unfair gaps in health outcomes between socially advantaged and disadvantaged groups. While the degree and determinants of inequity vary across countries and health issues, attention to equity is relevant across health issues and settings, with opportunities for countries to learn from each other. At the same time, there is much that is not yet known about inequities in health, its determinants, and access to care in countries across the Region. However, an absence of evidence is not evidence of an absence of inequities and efforts to improve health for all should occur in tandem with efforts to strengthen health information systems. Despite data gaps, the case for taking action on health equity and its underlying deter-

minants is strong. While there is an ongoing need to continuously strengthen health information system capacity to collect, analyse and use health equity-focused data, we know enough about health equity and its determinants to address them now in policies, programmes and services. Country-specific knowledge and priorities can provide an entry point for maximizing the effectiveness of policies and programmes to ensure no one is left behind.

It is hoped that this report helps to inform broader policy discussions in countries and the Region on how to advance health and the Sustainable Development Goals. The Sustainable Development Goals and universal health coverage challenge all of us to work towards inclusive societies that leave no one behind. Attention to health equity is at the heart of this effort.

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ANNEX 1.
MEASURING INEQUITIES

Health equity is the absence of inequalities in health that are avoidable by reasonable means *(2,4)*. Equity analysis aims to identify how health is patterned between social groups with different levels of underlying social advantage/disadvantage – that is, different positions in a social hierarchy. Examining which social groups are being left behind provides a foundation for targeting policies and programmes and evaluating their impact on inequities over time.

To measure progress towards achieving health equity, data describing the existence or magnitude of health disparities between social groups are required. This requires disaggregation of health data by "equity stratifiers" including:

» demographic: sex, age

» socioeconomic status: wealth, education, employment, area-level composite indices

» geographical area: urban, rural, subnational region

» race, ethnicity

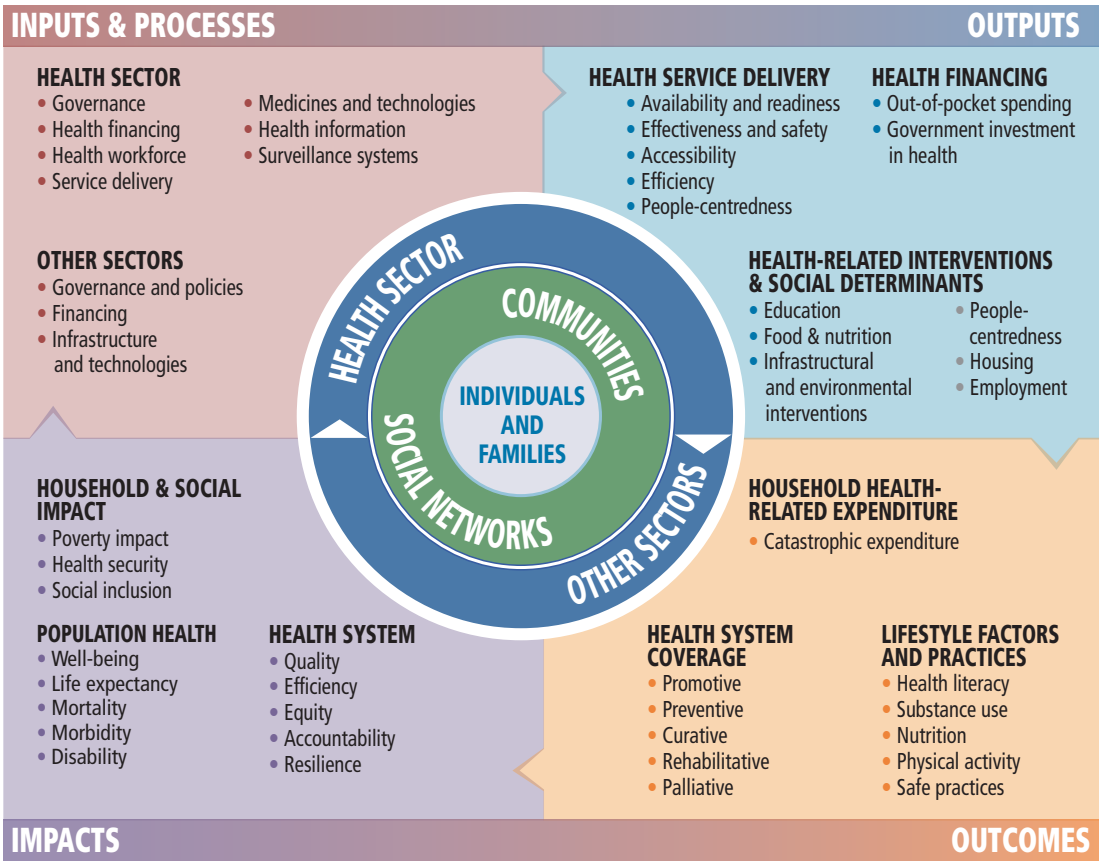
» other indicators of socially-constructed position.

Social advantage – and relatedly, health status – tends to vary along four key dimensions: social position, gender, ethnicity and geographical area *(25)*. These dimensions have differing pathways to health inequities and can interact in dynamic and cumulative ways, such that subgroups defined by several characteristics may be more likely to face acute inequities. Multiple stratification of health data is useful for identifying groups of particular vulnerability, for example, by filtering data by socioeconomic status and gender. Refining identification of social groups with adverse health in this way provides a basis for refining policies and targeting programmes to improve health equity.

Health indicator data

The *SDG and UHC Regional Monitoring Framework* comprises 88 indicators which set out the priority areas to guide action towards health equity in the Western Pacific Region (see Annex 2). As the Sustainable Development Goals are intersectoral across policy domains and take a holistic view of human development, 27 of the indicators are from the health goal (SDG3), 20 are other health-related SDG indicators, and 41 are additional indicators for health system reach, outcomes, and impacts to support monitoring of UHC (SDG 3.8.1). As shown in Fig. A.1, these indicators trace the flow of health sector and other health-relevant inputs on health outputs and outcomes, through to broader population health and social impacts.

FIG. A.1 **Western Pacific Region logic model**



Source: World Health Organization Western Pacific Region, 2016, Universal health coverage: moving towards better health. Action framework for the Western Pacific Region.

Dimensions of inequity data

Disaggregating data by geographic stratifiers is important for revealing gaps in service provision, promoting universal health coverage and addressing inequities in health status. Differences in exposures to risk and protective factors between urban and rural areas, along with geographical barriers to preventive services and timely and effective diagnosis and treatment may contribute to inequities between urban and rural and areas. These factors may be compounded by the socioeconomic vulnerability of rural/remote populations, and higher proportions of indigenous populations. To examine geographic differences in health outcomes, place of residence (urban or rural) or subnational region is used to stratify data.

A range of indicators is used to analyse health inequities on the basis of social position. The choice of stratifying indicator is guided by the availability of relevant data as well as country-specific contexts *(26)*. As an overarching principle, differences observed in equity analyses between better- and worse-off groups should be attributable to avoidable and unfair gaps in important social conditions that could be ameliorated through policy changes

in sectors beyond health. In many instances social stratifiers including level of education, wealth, income and occupation are correlated, and may therefore be similarly interpreted along a continuum of low–high material assets and/or social standing. However, in some instances, socially patterned exposures may have aetiological effects and these should inform selection of equity stratifiers *(26)*.

Applying a gender lens to health equity analysis aims to inform our understanding as to how gendered power relations create inequities through differentials in risk factors and exposures, manifestations of disease, access to resources and health services, broader social and cultural factors, and the interaction of gender with other determinants such as ethnicity, education or income *(27,28)*. To reveal the influence of gender on health inequities, "sex" is used as a binary stratifier (male or female) to quantify gradients in health inequities between women and men, girls and boys.

In many countries ethnicity is a profoundly inflammatory subject, and it may therefore not be politically feasible to monitor health disparities between ethnic groups. Where enabled by the available data, inequities presenting to different ethnic groups are presented in this report. Strategic use of other stratifying indicators, including geographic location, economic position, or other attributes that align with ethnic divides in country-specific contexts, can be used as proxies to identify possible inequities and design targeted interventions to narrow inequities patterned according to ethnicity.

Equity analysis as a foundation for policy

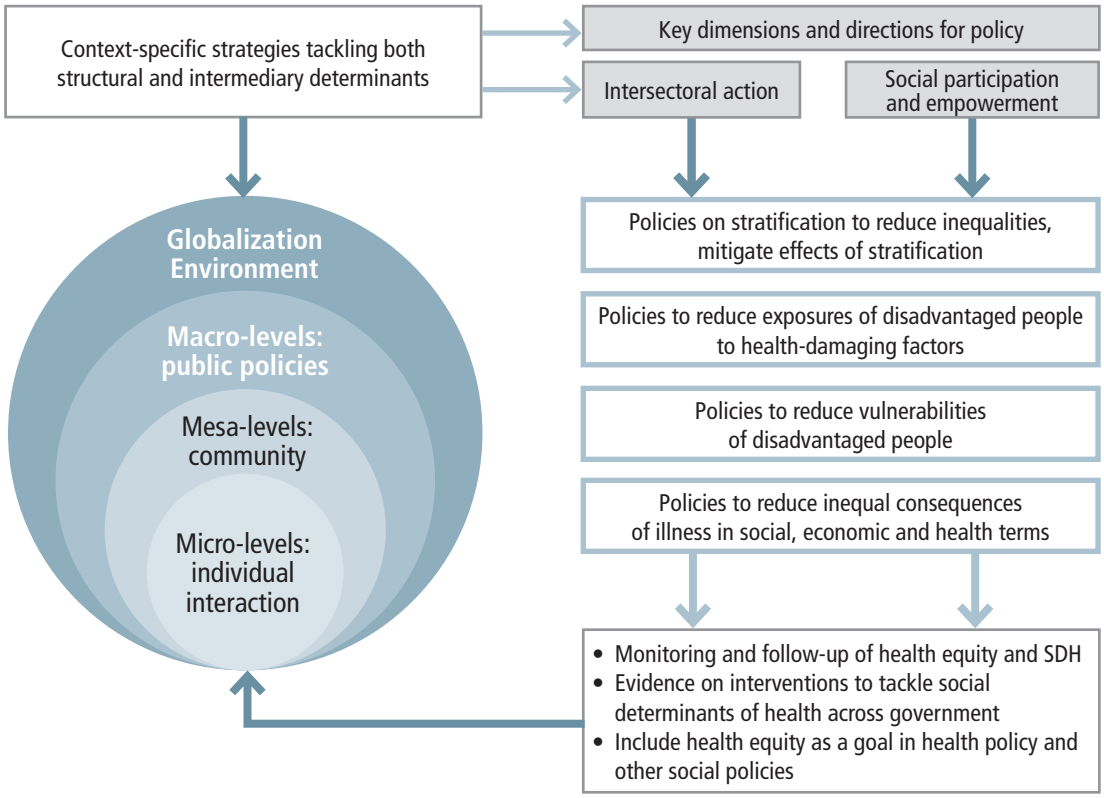
Equity analysis draws attention to the presence of inequities across different sectors and settings that influence health, by identifying the social drivers of health, and the policies, governance structures and financing mechanisms that enable or impede health equity. This serves as a starting point for effective responses in the form laws, policies and programmes to promote improvements among the most-disadvantaged subgroups that are at least as fast as the most advantaged, as outlined in Fig. A.2. Without a dedicated focus on equity, policies and programmes may achieve aggregate improvements in health indicators but risk intensifying inequities.

While careful selection of equity stratifiers can aid identification of policy sectors amenable to reform to improve equity outcomes, characteristic patterns of inequity across disaggregated data can prompt different policy responses. As Fig. A.3 shows, for equity stratifiers that have more than two ordered subgroups (that is, multiple subgroups that can be ranked based on logical criteria, such as wealth quintiles or levels of education), four primary patterns of inequity may be evident.

Each of the four patterns of inequity prompts a different policy response *(6)*.

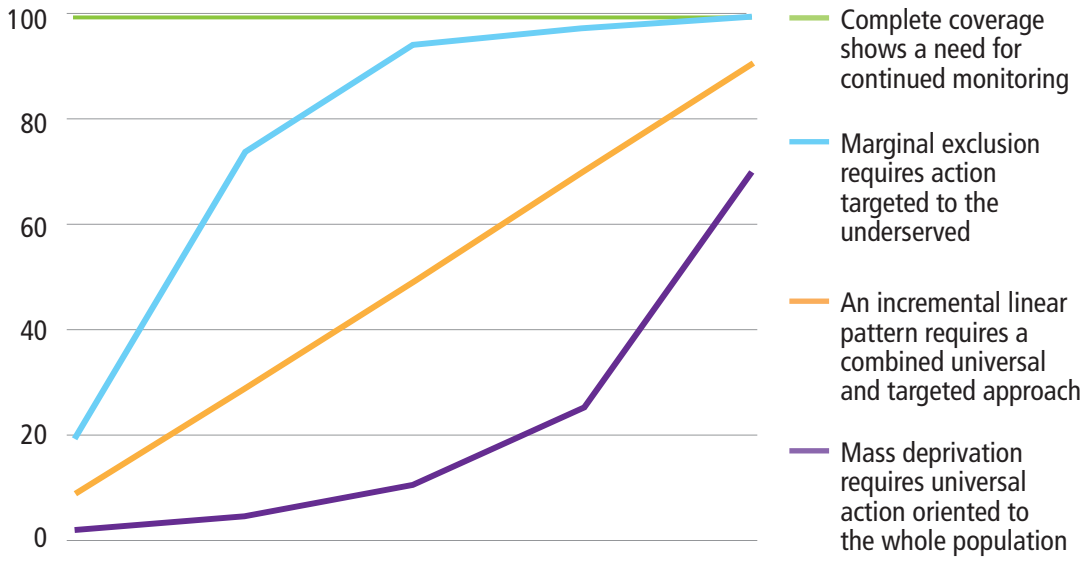
» A complete coverage pattern where (near) universal outcomes have been achieved warrants ongoing monitoring to ensure that the situation remains favourable for all.

FIG. A.2 Framework for action on social determinants of health



Source: World Health Organization Western Pacific Region, 2017, *Regional action agenda on achieving the Sustainable Development Goals in the Western Pacific*

FIG. A.3 Patterns of inequitable distribution (in percentage)



Source: Adapted from World Health Organization, 2015, *State of inequality: reproductive, maternal, newborn and child health.*

» A marginal exclusion pattern demonstrates a much poorer outcome in the lowest group relative to the other four. This scenario calls for a targeted approach, whereby resources are directed at the most disadvantaged.

» An incremental linear pattern indicates equal increases across groups. This pattern requires an approach that combines population-wide and targeted interventions.

» A mass deprivation pattern shows poor outcomes in all but the highest. This scenario warrants population-wide interventions, investing resources in all (or most) subgroup.

ANNEX 2. SDG AND UHC INDICATORS FOR HEALTH EQUITY MONITORING

TARGET	SDG3 (Ensure healthy lives and promote well-being for all at all ages) health indicators
3.1.1	Maternal mortality ratio
3.1.2	Proportion of births attended by skilled health personnel
3.2.1	Under-5 mortality rate
3.2.2	Neonatal mortality rate
3.3.1	New HIV infections per 1000 uninfected population
3.3.2	Tuberculosis incidence per 100 000 population
3.3.3	Malaria incidence per 1000 population
3.3.4	Hepatitis B incidence per 100 000 population
3.3.5	Number of people requiring interventions against neglected tropical disease
3.4.1	Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease
3.4.2	Suicide mortality rate
3.5.1	Coverage of treatment interventions (pharmacological, psychosocial and rehabilitation and aftercare services) for substance use disorders
3.5.2	Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of pure alcohol
3.6.1	Death rate due to road traffic injuries
3.7.1	Proportion of women of reproductive age (aged 15–49 years) who have their need for family planning satisfied with modern methods
3.7.2	Adolescent birth rate (aged 10–14 years; aged 15–19 years) per 1000 women in that age group
3.8.1	Coverage of essential health services
3.8.2	Proportion of population with large household expenditures on health as a share of total household expenditure or income
3.9.1	Mortality rate attributed to household and ambient air pollution
3.9.2	Mortality rate attributed to unsafe water, unsafe sanitation, and lack of hygiene (exposure to unsafe water, sanitation and hygiene for all [WASH] services)
3.9.3	Mortality rate attributed to unintentional poisoning
3.a.1	Age-standardized prevalence of current tobacco use among persons aged 15 years and older
3.b.1	Proportion of the target population covered by all vaccines included in their national programme
3.b.2	Total net official development assistance to the medical research and basic health sectors
3.b.3	Proportion of health facilities that have a core set of relevant essential medicines available and affordable on a sustainable basis
3.c.1	Health worker density and distribution
3.d.1	International Health Regulations (IHR) capacity and health emergency preparedness

TARGET	Other health-related SDG indicators
1.a.2	Proportion of total government spending on essential services (education, health and social protection)
1.3.1	Proportion of population covered by social protection floors/systems
1.5.1	Number of deaths, missing persons and directly affected persons attributed to disasters per 100 000 population
11.5.1	Prevalence of stunting (height for age <–2 standard deviation from the median of WHO Child Growth Standards) among children under 5 years of age
13.1.1	Prevalence of malnutrition (weight for height >+2 or <–2 standard deviation from median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting or overweight)
2.2.1	Proportion of ever-partnered women and girls aged 15 years and older subjected to physical, sexual or psychological violence by a current or former intimate partner in previous 12 months
2.2.2	Proportion of women and girls aged 15 years and older subjected to sexual violence by persons other than an intimate partner in the previous 12 months, by age and place of occurrence
5.2.1	Number of countries with laws and regulations that guarantee full and equal access to women and men aged 15 years and older to sexual and reproductive health care, information and education
5.2.2	Proportion of population using safely managed drinking-water services
5.6.2	Proportion of population using safely managed sanitation services, including a handwashing facility with soap and water
6.1.1	Proportion of population with primary reliance on clean fuels and technology
6.2.1	Annual mean levels of fine particulate matter (for example, PM2.5 and PM10) in cities (population weighted)
7.1.2	Number of victims of intentional homicide per 100 000 population, by sex and age
11.6.2	Conflict-related deaths per 100 000 population, by sex, age and cause
16.1.1	Proportion of the population subjected to physical, psychological or sexual violence in the previous 12 months
16.1.2	Proportion of children aged 1–17 years who experienced any physical punishment and/or psychological aggression by caregivers in the past month
16.1.3	Number of victims of human trafficking per 100 000 population, by sex, age and form of exploitation
16.2.1	Proportion of young women and men aged 18–29 years who experienced sexual violence by age 18
16.2.2	Proportion of children under 5 years of age whose births have been registered with a civil authority, by age
16.2.3	Proportion of countries that have achieved 100% birth registration and 80% death registration
16.9.1	Mortality rate attributed to unintentional poisoning
17.19.2(b)	Age-standardized prevalence of current tobacco use among persons aged 15 years and older

Additional indicators to monitor UHC
Life expectancy at birth
Total current expenditure on health as percentage of gross domestic product
Seat-belt wearing rate
Motorcycle helmet wearing rate
Bed occupancy rate
Immunization coverage rate for DTP3 (diphtheria-tetanus-pertussis)
Immunization coverage rate for measles
Stillbirth rate (per 1000 total births)
Case rate of congenital syphilis (per 100 000 live births)
Exclusive breastfeeding rate in infants 0–5 months of age
Incidence of low birthweight among newborns
Prevalence of anaemia in children aged 6–59 months
Anaemia prevalence in women of reproductive age (aged 15–49 years)
Prevalence of anaemia in women (proxy)
Age-standardized prevalence of raised blood glucose level among adults 18+ years
Age-standardized prevalence of overweight and obesity in persons aged 18+ years
Age-standardized prevalence of raised blood pressure among persons aged 18+ years
Age-standardized prevalence of insufficiently physically active persons aged 18+ years
Percentage of children under 5 years of age with suspected pneumonia who were taken to a health facility
Antiretroviral therapy (ART) coverage
Second-line treatment coverage among multidrug-resistant tuberculosis (MDR-TB) cases
Cervical cancer screening (rate)
Coverage of services for severe mental health disorders
Current expenditure on health by general government and compulsory schemes as a percentage of total current expenditure on health
Rate of use of assistive devices among people with disabilities
Proportion of newborns receiving essential newborn care
Percentage of newborns who had postnatal check-up within the first two days after birth
30-day hospital case fatality rate – acute myocardial infarction
Patient experience
Proportion of health-care facilities with basic water supply
Proportion of health-care facilities with basic sanitation
Hospital average length of stay
Dengue mortality
Mortality rate attributable to hepatitis B virus and hepatitis C virus infections
Proportion of deliveries in health facilities
Age-standardized prevalence of current tobacco use among persons aged 13–15 years

Additional indicators to monitor UHC *(continued)*
Prevalence of current tobacco smoking among youth
Outpatient service utilization rate
Doctor consultations per capita (in all settings) – outpatient visits (proxy)
Cataract surgical rate and coverage
Postoperative sepsis rate
Hospital readmission rate
Proportion of the population utilizing the rehabilitation services they require
HIV testing coverage among people living with HIV
People aged 15 years and over who received HIV testing and counselling, estimated per 1000 adult population (proxy)
Viral suppression rate among people on antiretroviral therapy

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