

## Indicator 3.8.1

### Name of Indicator, Target and Goal

**Indicator 3.8.1** Proportion of the target population covered by essential health services

**Target 3.8** Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all

**Goal 3** Ensure healthy lives and promote well-being for all at all ages

### Definition and Rationale

#### ○ Definition

Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population).

The indicator is an index reported on a unitless scale of 0 to 100, which is computed as the geometric mean of 14 tracer indicators of health service coverage described as below.

#### ○ Concepts

The index of health service coverage is computed as the geometric means of 14 tracer indicators. The 14 tracer indicators are as follows, organized by four broad categories of service coverage:

<RMNCH (Reproductive, maternal, newborn and child health) >

Tracer indicator	1 . Family Planning
Definition	Percentage of women of reproductive age (15–49 years) who are married or in- union who have their need for family planning satisfied with modern methods

Tracer indicator	2 . Pregnancy and delivery care
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Definition	Percentage of women aged 15-49 years with a live birth in a given time period who received antenatal care four or more times
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Tracer indicator	3 . Child immunization
Definition	Percentage of infants receiving three doses of diphtheria-tetanus-pertussis containing vaccine

Tracer indicator	4 . Child treatment (care-seeking for symptoms of pneumonia)
Definition	Percentage of children under 5 years of age with suspected pneumonia (cough and difficult breathing NOT due to a problem in the chest and a blocked nose) in the two weeks preceding the survey taken to an appropriate health facility or provider

<Infectious diseases>

Tracer indicator	5 . Tuberculosis treatment
Definition	Percentage of incident TB cases that are detected and successfully treated

Tracer indicator	6 . HIV/AIDS treatment
Definition	Percentage of people living with HIV currently receiving antiretroviral therapy (ART)

Tracer indicator	7 . Malaria prevention
Definition	Percentage of population in malaria-endemic areas who slept under an insecticide-treated net the previous night [only for countries with high malaria burden]  ※Japan is not Malaria endemic country.

Tracer indicator	8 . Water and sanitation
Definition	Percentage of households using at least basic sanitation facilities

<Non communicable diseases>

Tracer indicator	9 . Prevention of cardiovascular disease
Definition	Age-standardized prevalence of non-raised blood pressure (systolic blood pressure <140 mm Hg and diastolic blood pressure <90 mm Hg) among adults aged 20 years and older

Tracer indicator	1 0 . Management of diabetes
Definition	Age-standardized mean fasting plasma glucose (mmol/L) for adults aged 25 years and older

Tracer indicator	1 1 . Tobacco control
Definition	Age-standardized prevalence of adults $\geq 20$ years not smoking tobacco

<Service capacity and access>

Tracer indicator	1 2 . Hospital access
Definition	Hospital beds per capita, relative to a maximum threshold of 18 per 10,000 population

Tracer indicator	1 3 . Health workforce
Definition	Health professionals (physicians, psychiatrists, and surgeons) per capita, relative to maximum thresholds for each cadre Maximum threshold Physicians 0.9 per 1,000 population Psychiatrists 1 per 100,000 population Surgeons 14 per 100,000 population

Tracer indicator	1 4 . Health security
Definition	<p>International Health Regulations (IHR) core capacity index, which is the average percentage of attributes of 13 core capacities that have been attained</p> <p>The 13 core capacities are: (1) Legislation and financing; (2) IHR Coordination and National Focal Point Functions; (3) Zoonotic events and the Human-Animal Health Interface; (4) Food safety; (5) Laboratory; (6) Surveillance; (7) Human resources; (8) National Health Emergency Framework; (9) Health Service Provision; (10) Risk communication; (11) Points of entry; (12) Chemical events; (13) Radiation emergencies.</p>

### ○ Rationale

Target 3.8 is defined as “Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all”. The concern is with all people and communities receiving the quality health services they need (including medicines and other health products), without financial hardship. Two indicators have been chosen to monitor target 3.8 within the SDG framework. Indicator 3.8.1 is for health service coverage and indicator 3.8.2 focuses on health expenditures in relation to a household’s budget to identify financial hardship caused by direct health care payments. Taken together, indicators 3.8.1 and 3.8.2 are meant to capture the service coverage and financial protection dimensions, respectively, of target 3.8. These two indicators should be always monitored jointly.

Countries provide many essential services for health protection, promotion, prevention, treatment and care. Indicators of service coverage – defined as people receiving the service they need – are the best way to track progress in providing services under universal health coverage (UHC). Since a single health service indicator does not suffice for monitoring UHC, an index is constructed from 14 tracer indicators selected based on epidemiological and

statistical criteria. This includes several indicators that are already included in other SDG targets, thereby minimizing the data collection and reporting burden. The index is reported on a unitless scale of 0 to 100, with 100 being the optimal value.

### Data Sources and Method of collection

Tracer indicator	Data sources
1. Family Planning	<p>Japan’s routine surveys do not provide data for this tracer indicator. Therefore, we used annual estimation of Japan produced by the United Nations Department of Economic and Social Affairs (DESA) Population Division following the United Nations Statistics global metadata’s recommendation. In particular, we used “Demand for family planning satisfied by any modern method (Percentage)” in the Estimates and Projections of Family Planning Indicators.</p> <p><a href="https://www.un.org/en/development/desa/population/theme/family-planning/cp_model.asp">https://www.un.org/en/development/desa/population/theme/family-planning/cp_model.asp</a></p>
2. Pregnancy and delivery care	<p>Japan’s routine surveys do not provide data for this tracer indicator. Also, WHO Global Health Observatory, which is the recommended source by the United Nations Statistics global metadata, does not include estimation for Japan regarding the percentage of women aged 15-49 years with a live birth in a given time period who received antenatal care for four or more times. Therefore, we followed the recommended method of imputation algorithm in the metadata for SDGs indicators and calculated the median value among high-income countries* listed with available data.</p> <p>*High income countries listed in the metadata            Argentina, Australia, Austria, Belgium, Brunei Darussalam, Canada, Chile, Denmark, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Singapore, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States of America, Uruguay</p>

	<p><a href="https://apps.who.int/gho/data/node.main.ANTENATALCARECOVERAGE4">The percentage of women aged 15-49 with a live birth in a given time period that received antenatal care four or more times</a></p> <p><a href="https://apps.who.int/gho/data/node.main.ANTENATALCARECOVERAGE4">https://apps.who.int/gho/data/node.main.ANTENATALCARECOVERAGE4</a></p>
3. Child immunization	<p>“Trends of third-dose vaccination coverage in DPT-IPV (DPT-IPV 3)” from the number of routine vaccination published by Ministry of Health, Labour and Welfare, JAPAN</p> <p><a href="https://www.mhlw.go.jp/topics/bcg/other/5.html">https://www.mhlw.go.jp/topics/bcg/other/5.html</a></p>
4. Child treatment (care-seeking for symptoms of pneumonia)	<p>This indicator is not typically measured in higher income countries with well-established health systems.</p> <p>According to UN metadata, the coverage was estimated from a regression that predicts coverage of care-seeking for symptoms of pneumonia (on the logit scale), obtained from the WHO data base described above, as a function of the log of the estimated under-five pneumonia mortality rate, which can be found here:</p> <p><a href="https://www.who.int/healthinfo/global_burden_disease/estimates/en/index2.html">https://www.who.int/healthinfo/global_burden_disease/estimates/en/index2.html</a></p>
5. Tuberculosis treatment	<p>This indicator requires three main inputs and we calculate it based on the following formula.</p> <p>The final indicator = (1)/(2) x (3)</p> <p>(1) The annual number of new and relapse TB cases diagnosed and treated</p> <p>“Number of newly notified tuberculosis patients including new and re-treatment tuberculosis” from Tuberculosis in Japan: Annual Report published by the Research Institute of Tuberculosis.</p> <p><a href="http://www.jata.or.jp/rit/ekigaku/toukei/nenpou/">www.jata.or.jp/rit/ekigaku/toukei/nenpou/</a></p> <p>(2) The number of incident TB cases for the same year estimated by WHO</p> <p>“Estimated number of incident cases (all forms)” from WHO TB Burden estimates</p> <p><a href="http://www.who.int/tb/country/data/download/en/">www.who.int/tb/country/data/download/en/</a></p> <p>(3) Percentage of TB cases successfully treated (cured and treatment completed) among TB cases notified to the national health authorities</p>

	<p>“Treatment outcome of newly notified pulmonary cases by patient classification, prefecture and major city (total number of newly notified active cases, cured and treatment completed)” from TUBERCULOSIS in Japan: Annual Report published by the Research Institute of Tuberculosis.</p> <p><a href="http://www.jata.or.jp/rit/ekigaku/toukei/nenpou/">www.jata.or.jp/rit/ekigaku/toukei/nenpou/</a></p>
6. HIV treatment	<p>The treatment rate was calculated as the number of people who started treatment (On ART/Retained in Care) for those who attended the hospital regularly. The denominator does not include infected persons who died after diagnosis in Japan or who moved abroad after diagnosis, who do not attend the hospital regularly. Data were collected according to the method described in the following paper:</p> <p><a href="https://doi.org/10.1371/journal.pone.0174360">Iwamoto A, Taira R, Yokomaku Y, Koibuchi T, Rahman M, Izumi Y, Tadokoro T. The HIV care cascade; Japanese perspectives. PLoS One. 2017. 12(3): e0174360.</a></p>
7. Malaria prevention	<p>Japan is not a Malaria endemic country. Thus, we did not include this tracer indicator following UN metadata’s guidance.</p>
8. Water and sanitation	<p>We used estimation of Japan produced by WHO/UNICEF Joint monitoring program following the United Nations Statistics global metadata’s recommendation. In particular, we used the percentages of “Safely managed and Basic service” in Sanitation ladders in WHO/UNICEF Joint monitoring program Report.<a href="http://www.wssinfo.org/">http://www.wssinfo.org/</a></p>
9. Prevention of cardiovascular disease	<p>“Trend in the prevalence of hypertension” from Annual National Health and Nutrition Survey in Japan published by Ministry of Health, Labour and Welfare, JAPAN</p> <p><a href="https://www.mhlw.go.jp/bunya/kenkou/kenkou_eiyou_chousa.html">https://www.mhlw.go.jp/bunya/kenkou/kenkou_eiyou_chousa.html</a></p> <p>(※) We convert this national data to match the WHO World Standard Population.</p>
10. Management of diabetes	<p>Japan’s routine surveys do not provide data for this tracer indicator. Therefore, we used estimation of Japan from the Lancet article which follows the United Nations Statistics global metadata’s recommendation.</p>

	<p>"Web table 6: Age-standardized mean FPG by sex and country in 1980, 1990, 2000, and 2008, with uncertainty intervals as defined in Methods" from the Lancet.</p> <p>Danaei, Goodarz, et al. "National, regional, and global trends in fasting plasma glucose and diabetes prevalence since 1980: systematic analysis of health examination surveys and epidemiological studies with 370 country-years and 2·7 million participants." <i>The Lancet</i> 378.9785 (2011): 31-40.</p> <p>As the origina was divided by gender, we calculated total data using weighted average.</p>
11. Tobacco control	<p>"Trend of age and gender adjusted percentage of smoker" from annual national health and nutrition survey in Japan published by Ministry of Health, Labour and Welfare, JAPAN</p> <p><a href="https://www.mhlw.go.jp/bunya/kenkou/kenkou_eiyou_chousa.html">https://www.mhlw.go.jp/bunya/kenkou/kenkou_eiyou_chousa.html</a></p>
12. Hospital access	<p>"Total number of bed including hospital, clinic and dental clinic" from annual survey of medical institutions published by Ministry of Health, Labour and Welfare, JAPAN</p> <p><a href="https://www.mhlw.go.jp/toukei/list/79-1a.html">https://www.mhlw.go.jp/toukei/list/79-1a.html</a></p>
13. Health workforce	<p>"Total number of Physicians, Psychiatrists and Surgeons" from biennial survey of physicians published by Ministry of Health, Labour and Welfare, JAPAN.</p> <p><a href="https://www.mhlw.go.jp/toukei/list/33-20c.html">https://www.mhlw.go.jp/toukei/list/33-20c.html</a></p> <p>(1) Number of physician is physicians who work in health-care facilities and/or geriatric health service facilities.</p> <p>(2) Number of psychiatrists is physicians who mainly work in the department of psychiatry.</p> <p>(3) Number of surgeons is physicians who mainly work in the department of surgery, thoracic surgery, cardiovascular surgery, breast surgery, broncho-esophagological surgery, gastrointestinal surgery, anal surgery and pediatric surgery.</p>
14. Health security	<p>Same as Indicator 3.d.1</p>

## Calculation of the index and method



○ Calculation

• UHC Service Coverage Index

$$= (A \times B \times C \times D)^{1/4}$$

• A: RMNCH (Reproductive, maternal, newborn and child health) =

$$(\textcircled{1} \times \textcircled{2} \times \textcircled{3} \times \textcircled{4})^{1/4}$$

• B: Infectious diseases =  $(\textcircled{5} \times \textcircled{6} \times \textcircled{8})^{1/3}$

• C: Non communicable diseases =  $(\textcircled{9} \times \textcircled{10} \times \textcircled{11})^{1/3}$

• D: Service capacity and access =  $(\textcircled{12} \times \textcircled{13} \times \textcircled{14})^{1/3}$

① Family Planning	Numerator	Number of women aged 15-49 who are married or in-union who use modern methods
	Denominator	Total number of women aged 15-49 who are married or in-union in need of family planning
② Pregnancy and delivery care	Numerator	Number of women aged 15–49 years with a live birth in a given time period who received antenatal care four or more times
	Denominator	Total number of women aged 15–49 years with a live birth in the same period.
③ Child immunization	Numerator	Children 1 year of age who have received three doses of diphtheria-tetanus-pertussis containing vaccine
	Denominator	All children 1 year of age
④ Child treatment	Numerator	Number of children with suspected pneumonia in the two weeks preceding the survey taken to an appropriate health provider.
	Denominator	Number of children with suspected pneumonia in the two weeks preceding the survey taken to an appropriate health provider.

⑤ Tuberculosis treatment	Numerator	Number of new and relapse cases detected in a given year and successfully treated
	Denominator	Number of new and relapse cases in the same year
	<p>This indicator requires three main inputs:</p> <p>(1) The number of new and relapse TB cases diagnosed and treated in national TB control programmes and notified to WHO in a given year.</p> <p>(2) The number of incident TB cases for the same year, typically estimated by WHO.</p> <p>(3) Percentage of TB cases successfully treated (cured plus treatment completed) among TB cases notified to the national health authorities.</p> <p>Tracer indicator = (1)/(2) x (3)</p>	
⑥ HIV treatment	Numerator	Number of adults and children who are currently receiving ART at the end of the reporting period
	Denominator	Number of adults and children living with HIV during the same period
⑧ Water and sanitation	Numerator	Population living in a household with: flush or pour-flush to piped sewer system, septic tank or pit latrine; ventilated improved pit latrine; pit latrine with slab; or composting toilet.
	Denominator	Total population
⑨ Prevention of cardiovascular disease	Numerator	Number of adults aged 20 or older with systolic blood pressure <140 mm Hg and diastolic blood pressure <90 mm Hg (regardless of treatment status)
	Denominator	Number of adults aged 20 or older
⑩ Management of diabetes	Age-standardized mean fasting plasma glucose for adults aged 25 years and older (mmol/L).	

	<p>Mean fasting plasma glucose, which is a continuous measure (units of mmol/L), is converted to a scale of 0 to 100 using the minimum theoretical biological risk (5.1 mmol/L) and observed maximum across countries (7.1 mmol/L).</p> <p>Tracer indicator = <math>(7.1 - \text{original value}) / (7.1 - 5.1) * 100</math></p>	
⑪ Tobacco control	Numerator	Adults 20 years and older who have not smoked tobacco
	Denominator	Adults 20 years and older
⑫ Hospital access	Numerator	Number of hospital beds
	Denominator	Total population
⑬ Health workforce	Numerator	<p>Number of physicians, psychiatrists and surgeons</p> <p>( 1 ) Number of physician is physicians who work in health-care facilities and/or geriatric health service facilities.</p> <p>( 2 ) Number of psychiatrists is physicians who mainly work in the department of psychiatry.</p> <p>( 3 ) Number of surgeons is physicians who mainly work in the department of surgery, thoracic surgery, cardiovascular surgery, breast surgery, broncho-esophagological surgery, gastrointestinal surgery, anal surgery and pediatric surgery.</p>
	Denominator	Total population
⑭ Health security	Numerator	Number of attributes attained
	Denominator	Total number of attributes

○ Comments and limitations

1. Family Planning

Japan's routine surveys do not provide data for this tracer indicator. Therefore, we used annual estimation of Japan produced by the United Nations Population Division following the United Nations Statistics global metadata's recommendation.

## 2 . Pregnancy and delivery care

Japan's routine surveys do not provide data for this tracer indicator. Also, WHO Global Health Observatory, which is the recommended source by the United Nations Statistics global metadata, does not include estimation for Japan regarding the percentage of women aged 15-49 years with a live birth in a given time period who received antenatal care for four or more times. Therefore, we followed the recommended method of imputation algorithm in the metadata for SDGs indicators and calculated the median value among high-income countries listed with available data.

## 4 . Child treatment

Japan's routine surveys do not provide data for this tracer indicator. Also, WHO database of country-level observations Global Health Observatory, which is the recommended source by the United Nations Statistics global metadata, does not include estimation for Japan on the percentage of children under 5 years of age with suspected pneumonia in the two weeks preceding the survey taken to an appropriate health facility or provider. Therefore, we followed the recommended method of imputation algorithm in the metadata for SDGs indicators. We estimated from a regression that predicts coverage of care-seeking for symptoms of pneumonia (on the logit scale), obtained from the WHO data base described above, as a function of the log of the estimated under-five pneumonia mortality rate.

## 9 . Prevention of cardiovascular disease

The definition of United Nations Statistics global metadata targets for adults aged 18 or older, however, we investigated for adults aged 20 or older.

## 1 0 . Management of diabetes

Japan's routine surveys do not provide data for this tracer indicator. Therefore, we used estimation of Japan from the Lancet article which follows the United Nations Statistics global metadata's recommendation.

## 1 1 . Tobacco control

The definition of United Nations Statistics global metadata targets for adults 15 years and older who have not smoked tobacco in the last 30 days, however, we investigated for adults aged 20 or older who have not smoked tobacco.

#### 1 2 . Hospital access

The definition of United Nations Statistics global metadata excludes labor and delivery beds; however, our data includes these beds.

#### 1 3 . Health workforce

In this survey, physicians are classified based on their main specialities. The number of psychiatrists and surgeons includes only physicians who mainly work in the each department and they do not include psychiatrists and surgeons who did not register themselves as physicians who mainly work in these specialities.

(※) Listed high-income countries

Argentina, Australia, Austria, Belgium, Brunei Darussalam, Canada, Chile, Denmark, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Singapore, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States of America, Uruguay

### **Data disaggregation**

10. Management of diabetes has data sorted by gender.

5. Tuberculosis treatment, 9. Prevention of cardiovascular disease and 11. Tobacco control have data sorted by gender and age group.

### **References**

Statistic Decision, Department of Economic and Social Affairs, United Nations  
: SDG Indicators Metadata repository

<https://unstats.un.org/sdgs/metadata/files/Metadata-03-08-01.pdf>

### **Custodian Ministries of Data**

Ministry of Health, Labour and Welfare

### **Custodian Ministries of Related Policies**

Ministry of Health, Labour and Welfare

**International Organizations**

World Health Organization (WHO)