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

Target 3.c: Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States

Indicator 3.c.1: Health worker density and distribution

# Institutional information

## Organization(s):

World Health Organization (WHO)

# Concepts and definitions

## Health worker densities by occupation:

**Definition:**

***Density of medical doctors:*** The density of medical doctors is defined as the number of medical doctors, including generalists and specialist medical practitioners per 10,000 population in the given national and/or subnational area. The International Standard Classification of Occupations (ISCO) unit group codes included in this category are 221, 2211 and 2212 of ISCO-08.

***Density of nursing and midwifery personnel****:* The density of nursing and midwifery personnel is defined as the number of nursing and midwifery personnel per 10,000 population in the given national and/or subnational area. The ISCO-08 codes included in this category are 2221, 2222, 3221 and 3222.

***Density of dentists****:* The density of dentists is defined as the number of dentists per 10,000 population in the given national and/or subnational area. The ISCO-08 codes included in this category are 2261.

***Density of pharmacists:*** The density of pharmacists is defined as the number of pharmacists per 10,000 population in the given national and/or subnational area. The ISCO-08 codes included in this category are 2262.

**Health worker distribution by sex**

***Percentage of male medical doctors***: Male doctors as percentage of all medical doctors at national level. The ISCO-08 codes included in this category are 221, 2211 and 2212.

***Percentage of female medical doctors****:* Female doctors as percentage of all medical doctors at national level. The ISCO-08 codes included in this category are 221, 2211 and 2212.

***Percentage of male nursing personnel:*** Male nursing personnel as percentage of all nursing personnel at national level. The ISCO-08 codes included in this category are 2221 and 3221.

***Percentage of female nursing personnel:*** Female nursing personnel as percentage of all nursing personnel at national level. The ISCO-08 codes included in this category are 2221 and 3221.

## Comments and limitations:

Data on health workers tend to be more complete for the public health sector and may underestimate the active workforce in the private, military, nongovernmental organization and faith-based health sectors. In many cases, information maintained at the national regulatory bodies and professional councils are not updated.

As data is not always published annually for each country, the latest available data has been used. Due to the differences in data sources, considerable variability remains across countries in the coverage, periodicity, quality and completeness of the original data. Densities are calculated using national population estimates from the United Nations Population Division's World Population Prospects database and may vary from densities produced by the country.

# Methodology

## Computation method:

**Health worker densities by occupation:**

The figures for number of medical doctors (including generalist and specialist medical practitioners) depending on the nature of the original data source may include practising medical doctors only or all registered medical doctors.

The figures for number of nursing and midwifery include nursing personnel and midwifery personnel, whenever available. In many countries, nurses trained with midwifery skills are counted and reported as nurses. This makes the distinction between nursing personnel and midwifery personnel difficult to draw.

The figures for number of dentists include dentists in the given national and/or subnational area. Depending on the nature of the original data source may include practising (active) only or all registered in the health occupation. The ISCO -08 codes included here are 2261.

The figures for number of pharmacists include in the given national and/or subnational area. Depending on the nature of the original data source may include practising (active) only or all registered in the health occupation. The ISCO -08 codes that relate to this occupation is 2262.

In general, the denominator data for workforce density (i.e. national population estimates) are obtained from the United Nations Population Division's World Population Prospects database. In cases where the official health workforce report provides density indicators instead of counts, estimates of the stock were then calculated using the population estimated from the United Nations Population Division's World population prospects database (2017).

**Health worker distribution by sex:**

The number of male medical doctors as reported by the country is expressed as a percentage of total male and female medical doctors reported by the country

The number of female medical doctors as reported by the country is expressed as a percentage of total male and female medical doctors reported by the country

The number of male nursing personnel as reported by the country is expressed as a percentage of total male and female nursing personnel reported by the country

The number of female nursing personnel as reported by the country is expressed as a percentage of total male and female nursing personnel reported by the country.

## Regional and global aggregates:

The global average density was estimated as the population weighted average of the national densities.

For the regional average density, data for the countries with missing values in the period 2013-2018 were first estimated with neighbouring comparable countries. Then the regional average was also computed as a weighted average by pooling these estimated values plus the available national densities.

The population for estimating densities at regional and global level were extracted from the UN Population Division 2017.

# Data sources

In response to WHA69.19, an online National Health Workforce Accounts (NHWA) data platform was developed to facilitate national reporting. In addition to the reporting, the platform also serves as an analytical tool at the national/regional and global levels. Since Its launch in November 2017, Member States are called to use the NHWA data platform to report health workforce data. Complementing the national reporting through the NHWA data platform, additional sources such as the National Census, Labour Force Surveys and key administrative national and regional sources are also employed. Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices. Countries with missing data for the year 2016 (baseline value for reporting of the WHO 13th Global Programme of Work) were estimated from a linear model of density time trend based on at least five data points including one reported density in the period 2011-2013.

# Data availability

## Time series:

Data available for 2000-2018.

Web link to the database: http://www.who.int/hrh/statistics/hwfstats/en/

## Disaggregation:

National level data

# Calendar

## Data collection:

Ongoing process

## Data release:

First quarter of 2020

# Data providers

NHWA focal point at national level

# Data compilers

WHO

# References

## URL:

http://www.who.int/hrh/statistics/hwfstats/en/

## References:

Sixty-ninth World Health Assembly Agenda Item 16.1. Global strategy on human resources for health: workforce 2030 (2016), available from (http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_R19-en.pdf)

WHO (2014). Global strategy on human resources for health: Workforce 2030 (http://who.int/hrh/resources/pub_globstrathrh-2030/en/)

"WHO Global Health Workforce Statistics." World Health Organization, n.d. Web. Feb. 2018. (http://www.who.int/hrh/statistics/hwfstats/en/)

"WHO Global Health Workforce Statistics." World Health Organization, n.d. Web. Feb. 2018. (http://apps.who.int/gho/data/node.main.A1444?lang=en&showonly=HWF)

WHO, National Health Workforce Accounts: A Handbook, n.d. Wed. Feb. 2018. (http://www.who.int/hrh/statistics/nhwa/en/)

WHO 13th Global Programme of Work (https://www.who.int/about/what-we-do/gpw-thirteen-consultation/en/)