

Part 3. Global pharmacy workforce description

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Summary

- The 2009 FIP Global Pharmacy Workforce Survey (English, French, Spanish) and data for 56 countries are available for download from www.fip.org/hr.
- Pharmacy workforce density varies considerably between countries and is associated with economic development.
- African countries have both low densities of pharmacists and pharmacies, indicating limited access points to facilities providing access to medicines and skilled human resources to manage these. Several countries have many times more pharmacies than pharmacists, flagging the issue of appropriate supervision of pharmaceutical services.
- The proportion of the workforce that is actively practicing may be as low as 55%. Human resource information systems should be able to determine the proportion of the workforce that is active in order to inform workforce planning.
- Pharmacy technicians form an important component of the pharmacy workforce in many countries, comprising up to 75% of the pharmacy workforce. Several countries do not have any pharmacy technicians.
- The majority of pharmacists are employed in community retail pharmacy, followed by hospital, industry, research and academia and regulation. The distribution across sectors varies between countries though regional trends can be observed.

3.1 Introduction and methods

The 2009 FIP Global Pharmacy Workforce Survey was conducted between September 2008 and April 2009. FIP Member Organisations, respondents to the 2005 FIP Global Pharmacy Workforce Survey together with other contacts for professional bodies, regulatory bodies and universities were approached to provide data. The questionnaire was developed in collaboration with the FIP Collaborating Centre, School of Pharmacy, University of London and the FIP Board of Pharmacy Practice Working Group on Pharmacy Workforce. The questionnaire sought data relating to pharmacy education, workforce and relevant regulations for both pharmacists and pharmacy technicians. The questionnaire was administered online in English, French and Spanish. The dataset was cleaned and checked with respondents before being prepared in spreadsheet and SPSS for analysis. The questionnaires and data files are available for download from www.fip.org/hr.

A total of 56 countries responded to the questionnaire, an increase on 34 respondent countries in 2005 (Table 1). These 56 countries represent approximately half of the world's population. There was an increase in the number of countries responding from some regions with an increase in Africa from 5 to 10, Eastern Mediterranean region from 2 to 7, and Americas from 4 to 10 between 2005 and 2009. This may be due in part to the questionnaire being available in other languages for the first time. Findings should be interpreted with care as they are not necessarily representative of all countries, however significant trends and associations can be observed in the dataset.

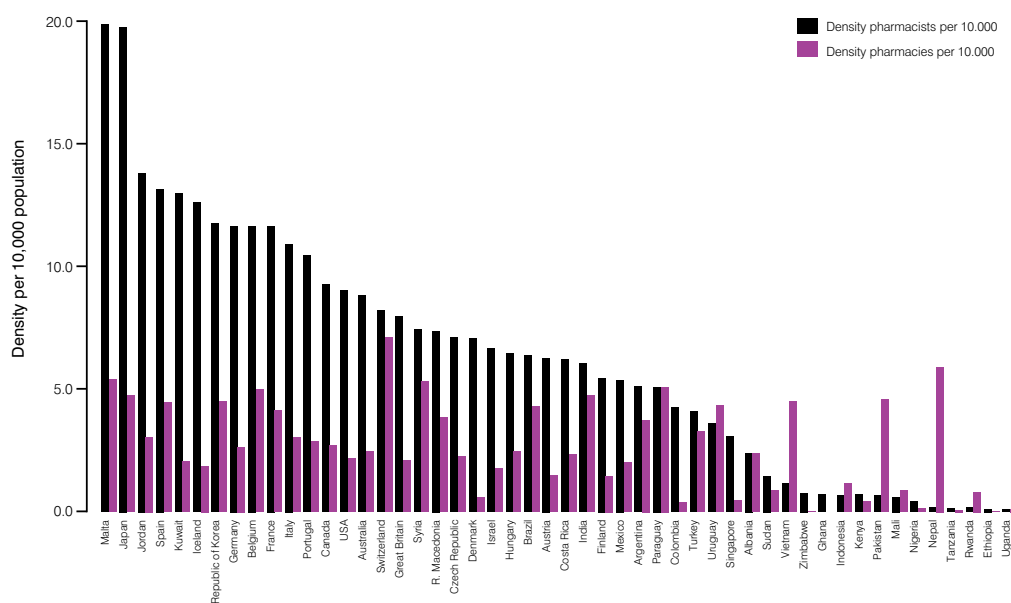
Table 1. Respondent countries (56)

WHO Region	Countries
Africa (10)	Ethiopia, Ghana, Kenya, Mali, Nigeria, Rwanda, Tanzania, Chad, Uganda, Zimbabwe
Eastern Mediterranean (7)	Egypt, Iraq, Jordan, Kuwait, Pakistan, Sudan, Syria
Europe (21)	Albania, Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Iceland, Israel, Italy, Malta, Portugal, Republic of Macedonia, Serbia, Spain, Switzerland, Turkey
Pan- America (10)	Argentina, Brazil, Canada, Chile, Colombia, Costa Rica, Mexico, Paraguay, Uruguay, USA
South East Asia (3)	India, Indonesia, Nepal
Western Pacific (5)	Australia, Japan, Republic of Korea, Singapore, Vietnam

3.2 Global overview: Workforce and pharmacy density

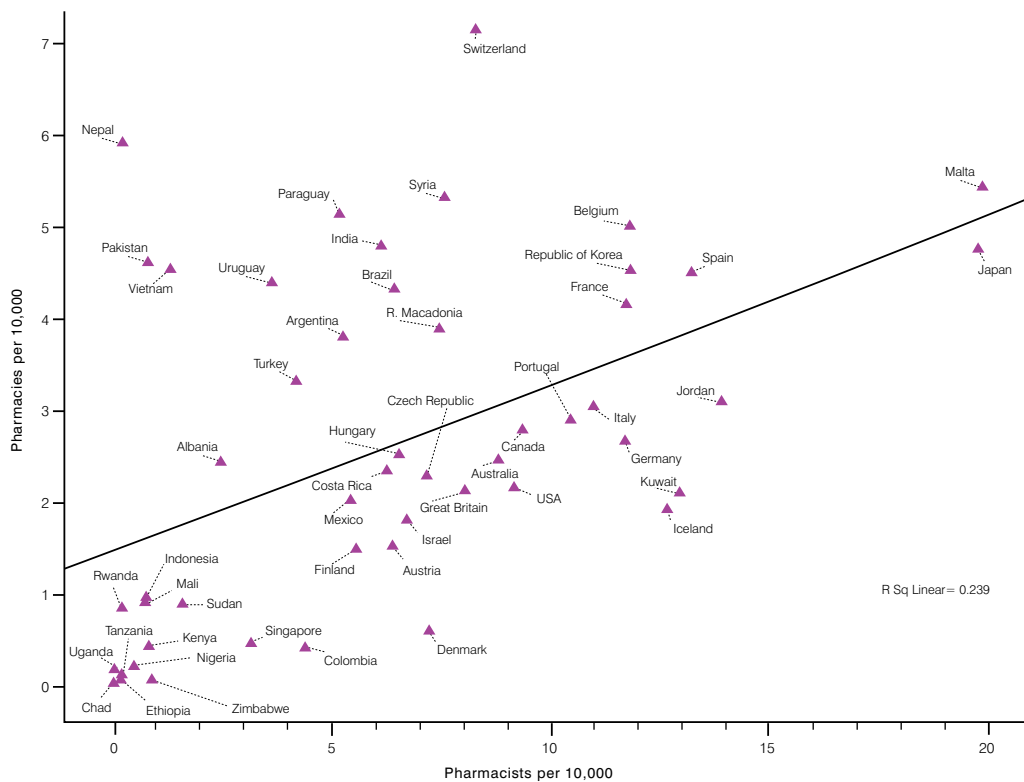
The density of pharmacists per 10,000 population varies greatly between countries ranging from 0.04 (Chad) to 18.88 (Malta). Figure 1 presents the density of pharmacists (total) and pharmacies (total including community, hospital, etc) per 10,000 population. In most countries, there is a greater density of pharmacists than pharmacies. Several countries have many times more pharmacies than pharmacists (Uruguay, Vietnam, Pakistan, Nepal, Rwanda), flagging the issue of appropriate supervision of pharmaceutical services.

Figure 1. Density of pharmacists and pharmacies per 10,000 population (50 countries)



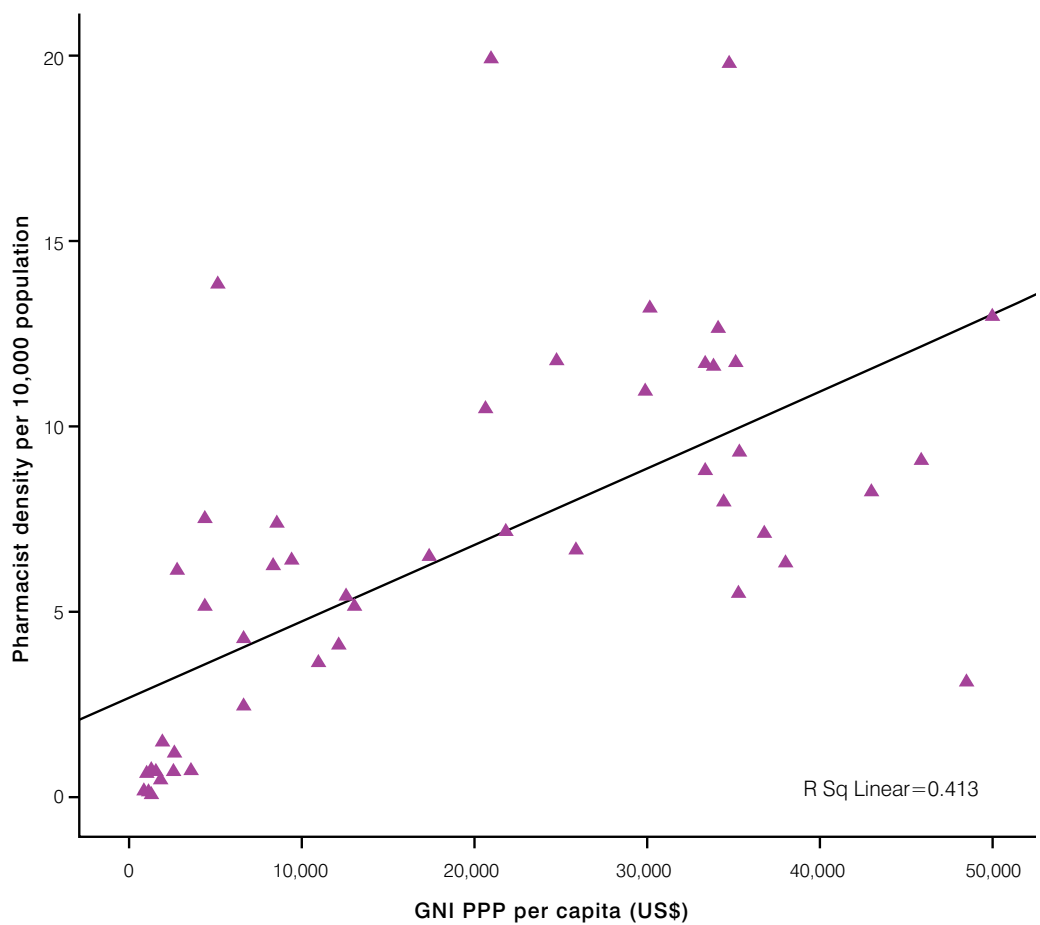
There is a positive relationship between the density of pharmacies (facilities that dispense medicines) and pharmacists (Figure 2). Countries with higher densities of pharmacists also tend to have higher densities of pharmacies ($R^2 = 0.239$, $p < 0.001$). The majority of pharmacies are in the retail community pharmacy sector with up to 10% of pharmacies in hospitals. African countries are observed to lack both pharmacies and pharmacists, which has implications for access to medicines given the inadequate availability (and likely inequitable distribution) of access points and skilled workforce.

Figure 2. Pharmacist and pharmacy density per 10,000 population (50 countries)



There is also a relationship between the economic status of a country (Gross National Income) and pharmacist density ($R^2 = 0.413$, $p < 0.001$). This implies that human resource development is a function of economic development.

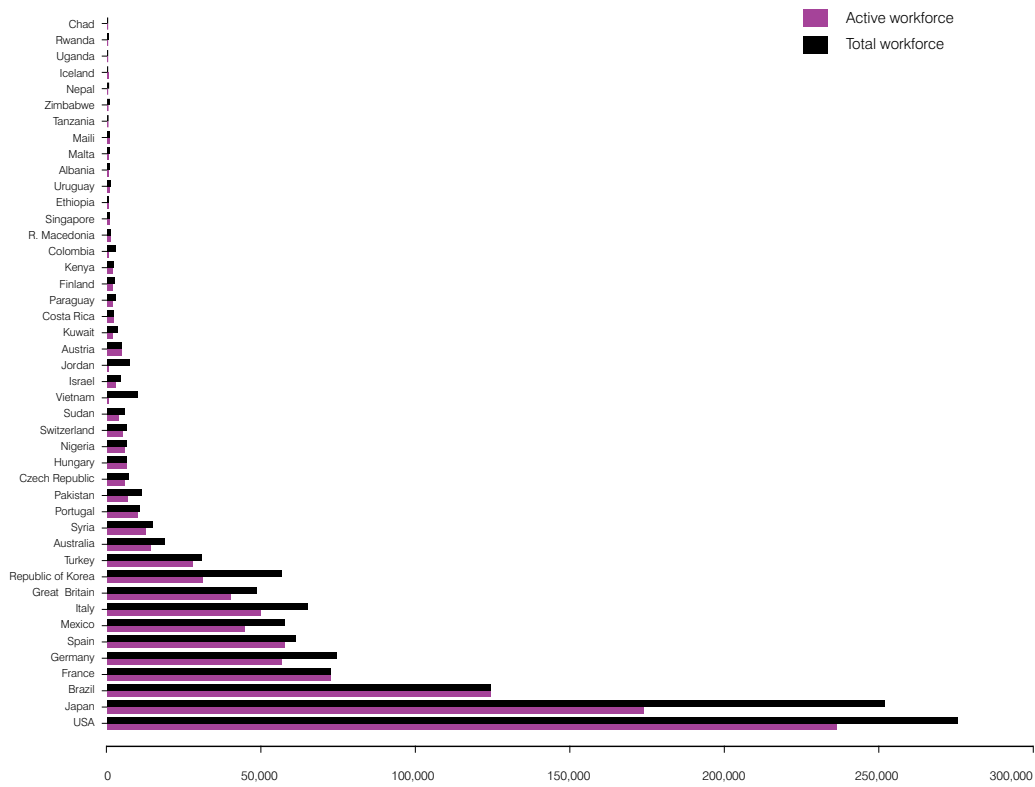
Figure 3. Pharmacist density per 10,000 population by GNI (50 countries)



GNI data source: World Bank 2007. GNI adjusted for purchasing power parity(PPP) in US\$.

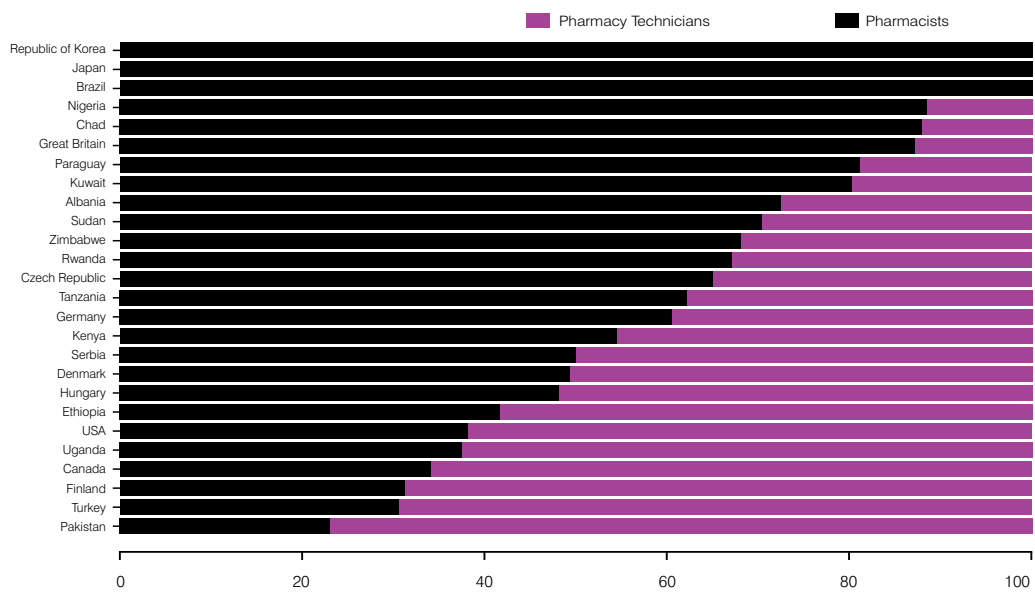
Total pharmacist figures may not be representative of the active workforce. Data was also sought on the number of pharmacists in active practice. The total number of pharmacists and actively practicing pharmacists (where available) in each country is described in Figure 4. The proportion of pharmacists that are actively practicing may be as low as 55% (Republic of Korea) which has significant implications for workforce planning, though many countries were unable to identify the active workforce.

Figure 4. Total and active pharmacist workforce by country (44 countries)



The density of pharmacy technicians per 10,000 population ranged from 0.005 (Chad) to 9.4 (Turkey). Several countries such as Brazil, Republic of Korea and Japan do not have pharmacy technicians or equivalent mid-level cadres. Pharmacy technicians comprise up to 75% of the pharmacy workforce in Pakistan. Figure 5 depicts the pharmacy workforce composition (skill mix).

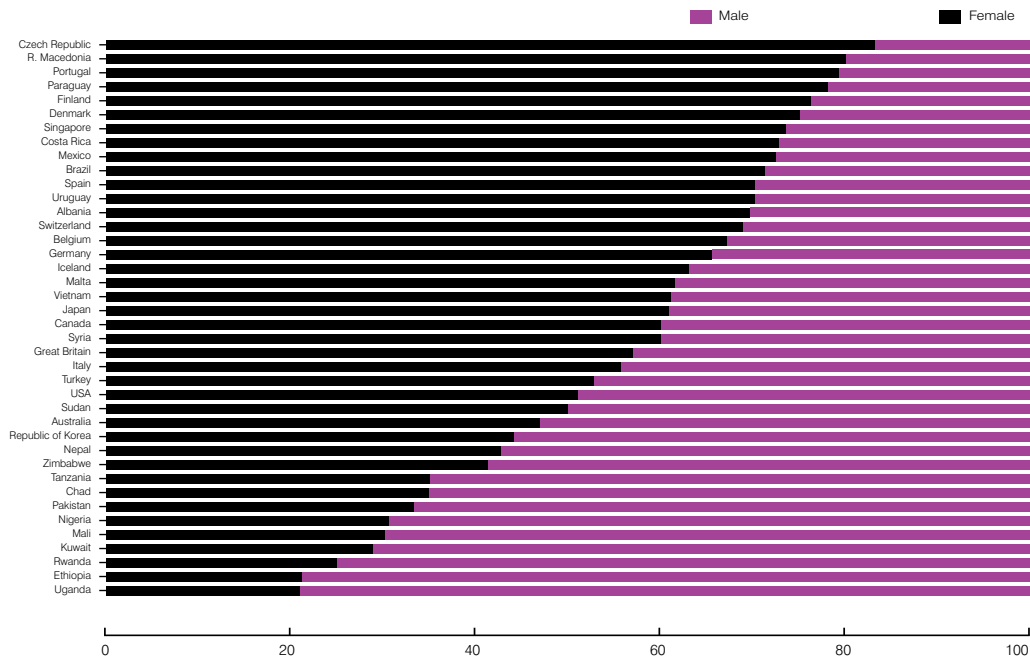
Figure 5. Pharmacy workforce composition (%) by country (26 countries)



3.3 Pharmacist gender distribution

There is a feminisation of the pharmacist workforce in many countries, potentially due to changing roles which appeal to females (greater emphasis on pharmaceutical care) and greater flexibility for part time work. The proportion of the total pharmacist workforce that is female varies from 20% to 80% between countries (Figure 6). Almost 80% of the pharmacist workforce is female in the Czech Republic whilst only 20% of the workforce is female in Uganda.

Figure 6. Pharmacist gender distribution (%) by country (40 countries)



3.4 Pharmacist employment distribution

On average, 58% of pharmacists were found to work in retail community pharmacy, 12% in hospital, 12% in industry, 4% in research and academia and 4% in regulation. The African region has less than 5% of its workforce employed in the pharmaceutical industry, in contrast to the South East Asian region where the pharmaceutical industry employs up to 55% of the pharmacist workforce (Figure 7). There is significant variation between countries within each region as denoted by the error bars in Figure 7.

Figure 7. Pharmacist distribution (%) by employment area (45 countries)

