

Practicing Urologists *Across the Globe*

2015



American
Urological
Association

Advancing Urology™

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Summary



PURPOSE

As the global population grows and ages, the demand for urologic care is increasing. The objective of this study is to understand, characterize and compare urologists across the globe.

METHODS

Data describing urology workforce and clinical practice were collected through the 2015 American Urological Association (AUA) Census. Weighted analyses of the U.S. samples to represent the entire population of U.S. practicing urologists were performed and used as baselines for comparison. Due to the inaccessibility of national master files of practicing urologists in other countries, unweighted sample analyses of practicing urologists in other countries were performed and compared. Continents and countries with 20 or more respondents were included in this report.

RESULTS

A total of 3,813 practicing urologists from 106 countries completed the Census, including 2,108 from the U.S. and 1,705 from outside of the U.S. Remarkable variations are observed in workforce characteristics and practice patterns across countries and continents, including demographics, work setting, employment status, work hours and patient encounters, use of electronic health records, adherence to clinical practice guidelines in clinical decision-making, other professional roles and number of weeks of vacation used. Smaller variations were seen in sub-specialization and planned retirement age.

CONCLUSIONS

Findings from this study provide descriptive accounts of the various global experiences and information that may bridge knowledge gaps, inform urology workforce planning and implementation and, ultimately, improve global urologic health.

About the American Urological Association (AUA)

THE ORGANIZATION

Founded in 1902 and headquartered near Baltimore, Maryland, the AUA serves more than 22,000 members throughout the world as a leading advocate for the specialty of urology. The AUA is a premier urologic association, providing invaluable support to the urologic community by fostering the highest standards of urologic care through education, research and the formulation of health policy.

AUA MISSION

The AUA mission is to promote the highest standards of urological clinical care through education, research and the formulation of health care policy.

AUA VISION

The AUA vision is to be the premier professional association for the advancement of professional urologic patient care.

The AUA Annual Census

The AUA's Annual Census (<http://www.auanet.org/census>) is a systematically designed, specialty-wide survey of urology. The primary goal of the Census is to provide a definitive source of data surrounding the urologic community, such as providers' geographic distribution, demographic characteristics, education and training and patterns of urology practice. The data collected assist in filling knowledge gaps and meeting research needs while, ultimately, improving patient care.

For more information about the AUA, please visit www.AUAnet.org.

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Introduction



Millions of individuals who are affected by urologic diseases and conditions, such as urologic cancers, sexual function/infertility and urinary incontinence, are clinically cared for by urologists.^{1,2,3} As surgical specialists, urologists must also demonstrate expertise in internal medicine, pediatrics, gynecology, and other specialties due to the overlap of various conditions. As the global population grows and ages, the demand for urologists has intensified. Research about urologic workforce and practice and cross-national variations is growing in importance. Such research is needed in order to prepare the appropriate workforce to meet future population needs and improve global health.

Urology is a well-established surgical specialty. However, reports on urology workforce across the globe are available in only a few advanced countries. Among these advanced countries, the annually published reports that systematically examine the urology workforce and practice patterns from multiple angles are found only in the United States.^{4,5} In Canada, National Physician

Surveys (NPS) were conducted and reported in selected years based on a small sample of approximately 50-70 urologists nationally.⁶ British statistics on the urology workforce only focus on workforce size, gender composition, projection, retirement, trainees, certification, and procedures performed.⁷ The Royal Australasian College of Surgeons generated a total of four reports. Its 2014 report provides information on the demographics, work patterns, employment and future work intentions of urologists in Australia and New Zealand.⁸

International comparisons of the physician workforce were found in neurology,⁹ ophthalmology¹⁰ and gastroenterology.¹¹ Comparative studies on the urology workforce and patterns of clinical practice cross countries are rarely found. The available studies published are limited in the coverage of countries and scope of study^{5,12} or outdated¹³ and hard to compare internationally. With the exception of urologist-to-population ratios and the number of residents in European Union countries, numbers are difficult to interpret due to very significant

differences in terms of what constitutes a “urologist” in different countries.

The objective of this study was to characterize and compare urologists across the globe on workforce demographics, training, sub-specialization, practice setting, employment status, professional roles, workload and productivity, the adoption of new techniques, the adherence to practice guidelines in clinical decision-making, and other characteristics of clinical practice through a single questionnaire and a comparable analytical approach. Findings from this study provide information that can bridge knowledge gaps, inform urology workforce planning and implementation and, ultimately, improve global urologic care.

Data and Methods

DATA SOURCES

Data used in this study were collected through the 2015 American Urological Association (AUA) Annual Census, a systematically designed annual survey of urology. Among the AUA's 22,000 members throughout the world, two-thirds are U.S.-based, with the remainder of the membership from outside of the U.S. The 2015 AUA Annual Census was launched at the 2015 AUA Annual Meeting in New Orleans on May 15, 2015 and remained online to both AUA members and non-members until September 30, 2015. Each respondent was assigned an identification number prior to the submission of responses to the Census questions. This step ensured that no respondent could take the survey more than once. In this study, 3,813 practicing urologists from 106 countries completed the Census, including 2,108 practicing urologists from the United States and 1,705 practicing urologists from outside of the U.S.

DATA ELEMENTS

Data collected from practicing urologists include demographics (age, gender, and race), education and training, geographical location of practice, practice setting, size of practice, sub-specialty areas, years of practice in urology, employment status, hours of clinical work per week, patient encounters per week, other professional roles, use of electronic health records (EHRs), intended retirement age and the adherence to AUA clinical practice guidelines when making clinical decisions.

DATA ANALYSIS

Estimates of characteristics of the practicing urologists based on survey samples can differ from those that would be obtained if all practicing urologists were surveyed. Ninety-five percent confidence intervals (CIs) were used to measure and report the precision of each estimate. Confidence intervals for the median responses were calculated using the Hettmansperger-Sheather method.^{5,16,17} This method presents an approximation of distribution-free intervals for the median of an absolutely continuous distribution based on interpolation of adjacent order statistics and production of two-sided confidence intervals with the lower limits and upper limits being rounded to the nearest integers. Confidence intervals for proportions were calculated using Wilson's method,^{18,19,20} which has good properties even for a small number of responses and/or extreme proportions. Data were analyzed using both IBM-SPSS 22.0 and MS Excel and reported at both the continent and country levels. Only continents and countries with 20 or more responses were reported.

DATA GENERALIZABILITY

Due to the availability of a master file of all practicing urologists in the U.S. maintained by the AUA, weighted analyses of the U.S. samples to represent the entire population of practicing urologists in the U.S. were performed and reported³ previously and used as baselines for comparison in this study. Samples from urologists practicing urology outside the U.S. were directly analyzed without the adjustment for non-response due to the inaccessibility of such practicing urologist master files in other countries. Thus, results regarding practicing urologists from outside the U.S. apply to Census samples and may not be generalizable.

Findings



As shown in Table 1, 3,813 practicing urologists from 106 countries completed the 2015 AUA Annual Census, including 2,108 samples representing 11,990 practicing urologists in the U.S. and 1,705 practicing urologists from outside of the U.S. Continents and countries with 20 or more respondents were included in this report.

TABLE 1**Geographic Distribution by Continents and Countries with 20 or More Respondents**

Continent/Country	Number	Percent	2015 GDP per capita in nominal (\$) by World Bank [^]
Practicing Urologists	3,813		
United States	2,108		\$55,837
Non-U.S. countries	1,705	100%	
Africa	109	6.4	
Egypt	55	3.2	\$3,615
Europe	268	15.7	
Germany	48	2.8	\$41,221
Spain	35	2.1	\$25,832
Italy	35	2.1	\$29,848
Turkey	34	2.0	\$9,130
United Kingdom	24	1.4	\$43,733
Asia	495	29.0	
India	100	5.9	\$1,582
Japan	66	3.9	\$32,477
Philippines	65	3.8	\$2,899
China	43	2.5	\$7,928
South Korea	30	1.8	\$27,222
Saudi Arabia	22	1.3	\$20,482
Bangladesh	21	1.2	\$1,212
Israel	21	1.2	\$35,330
North America	308	18.1	
Mexico	114	6.7	\$9,009
Canada	77	4.5	\$43,251
Dominican Republic	42	2.5	\$6,373
South America	496	29.1	
Brazil	278	16.3	\$8,538
Argentina	82	4.8	\$12,622
Peru	37	2.2	\$6,121
Colombia	28	1.6	\$6,056
Chile	21	1.2	\$13,383
Oceania	29	1.7	
Australia	22	1.3	\$56,330

[^]This is the value of all final goods and services produced within a nation in a given year, converted at market exchange rates to current U.S. dollars, divided by the average (or mid-year) population for the same year.

Based on median age in years, practicing urologists are youngest in Mexico (43), Saudi Arabia (44) and China (45). Urologists are oldest in the United Kingdom (57), Israel (57), and Italy (56), as shown in Figure 1. Figure 2 shows that urology is a male-dominated profession; the percentages of female urologists are relatively high in Spain (17.1 percent), Canada (10.4 percent), Australia (9.5 percent), Chile (9.5 percent) and the Dominican Republic (9.5 percent). As shown in Figure 3, practicing urologists are most likely to have fellowship training in South Korea (93.3 percent), China (90.7 percent), and Israel (90.5 percent) and least likely to have such training in India (29.0 percent), the U.S. (35.9 percent) and Bangladesh (42.9 percent).

FIGURE 1
Median Age of Practicing Urologists

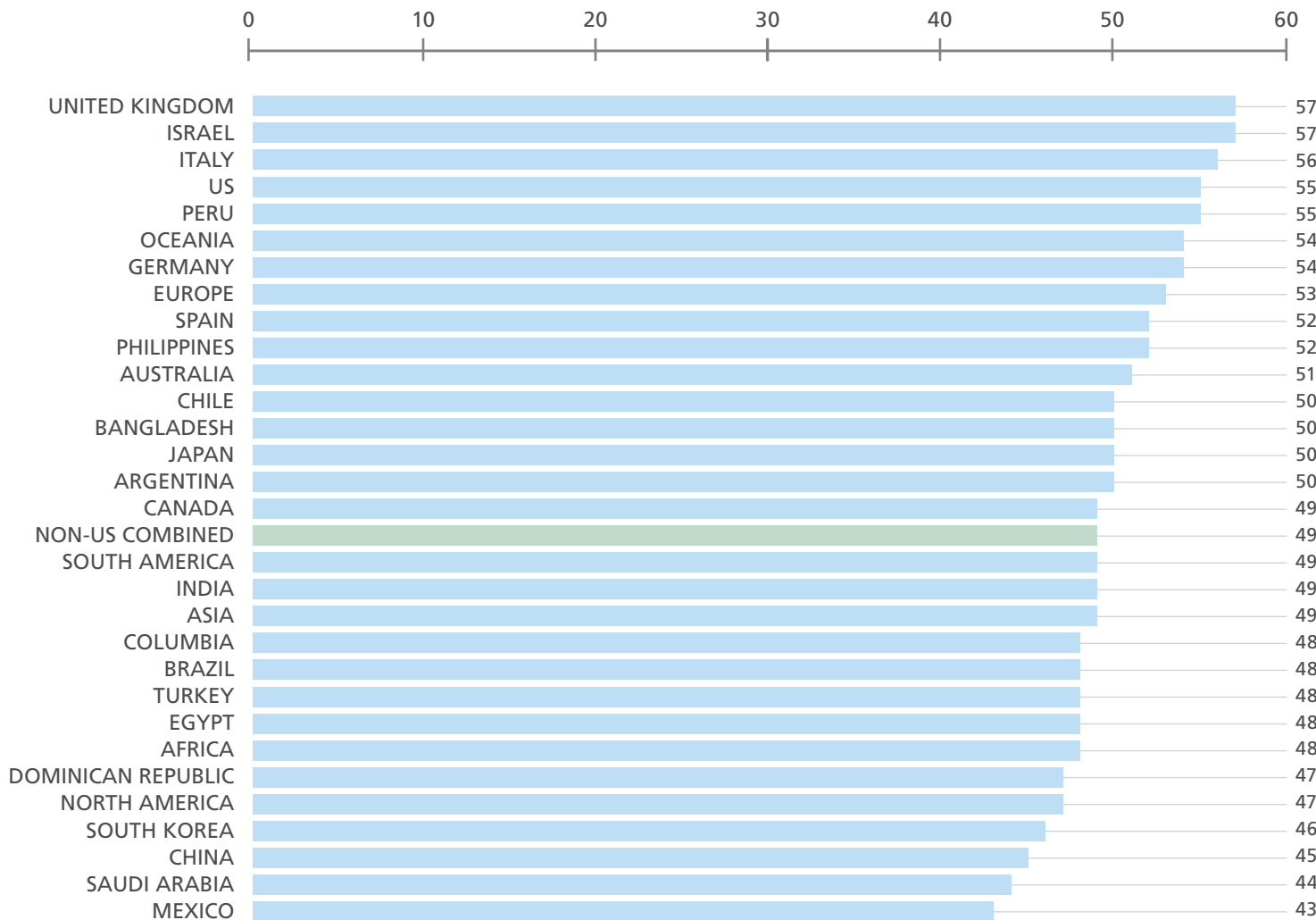


FIGURE 2

Percent of Female Practicing Urologists in Workforce

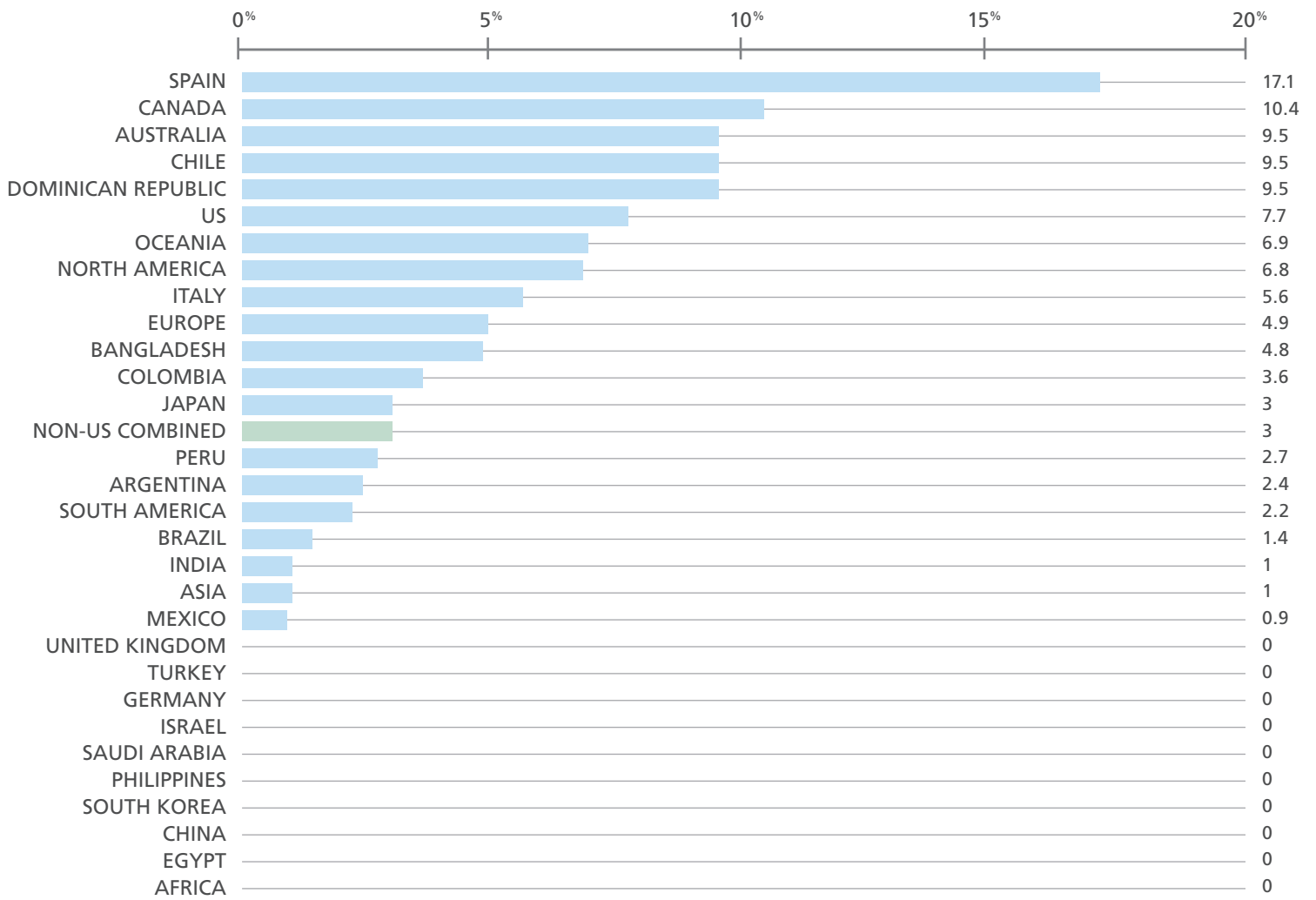
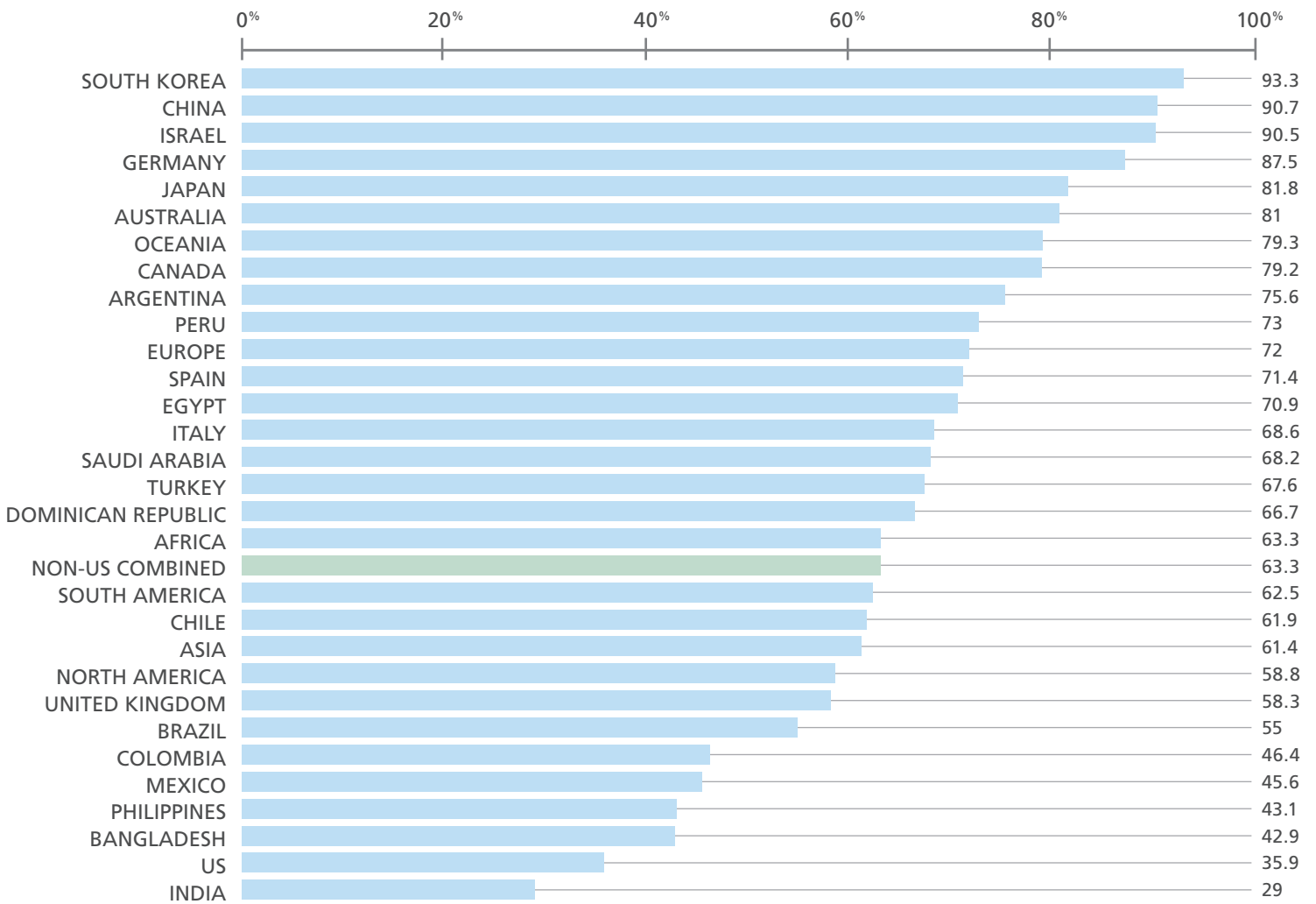


FIGURE 3

Percent of Practicing Urologists with Completed Fellowship Experience



As demonstrated in Figure 4, practicing urologists in Italy, Israel and the United Kingdom had the most years in practice of urology, with respective median numbers of years of 25, 25 and 22, compared with Bangladesh, Saudi Arabia and Mexico with fewest median numbers of years of 9, 11 and 11. Practicing urologists had both the longest median work hours and hours on clinical duties per week in Canada (60, 50), Japan (58, 40) and the U.S. (55, 50). However, practicing urologists saw the most patients per week in South Korea (120), India (100) and Germany (100), as shown in Figures 5, 6 and 7.

FIGURE 4
Median Number of Years of Practice in Urology

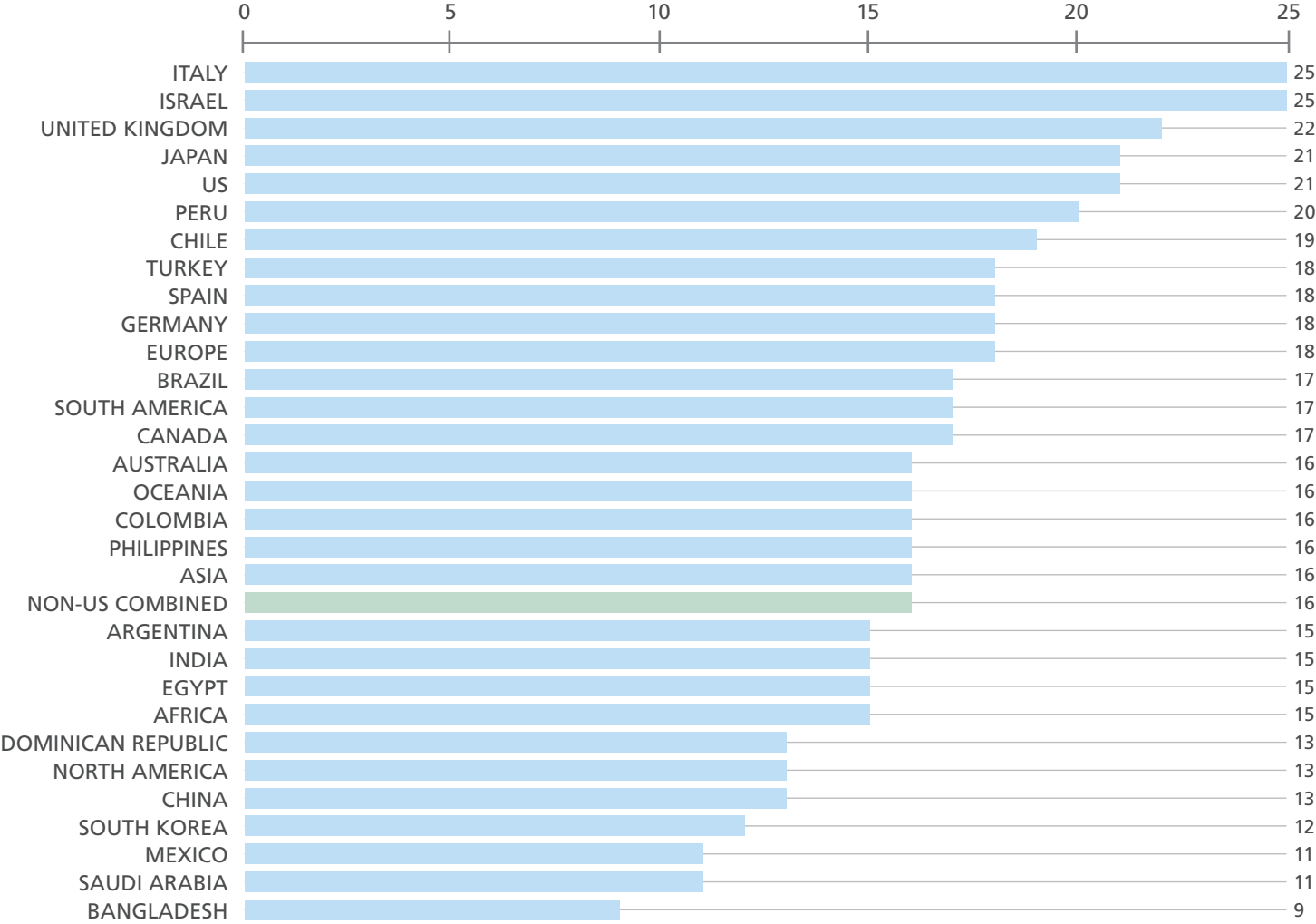


FIGURE 5

Median Number of Work Hours in a Typical Week

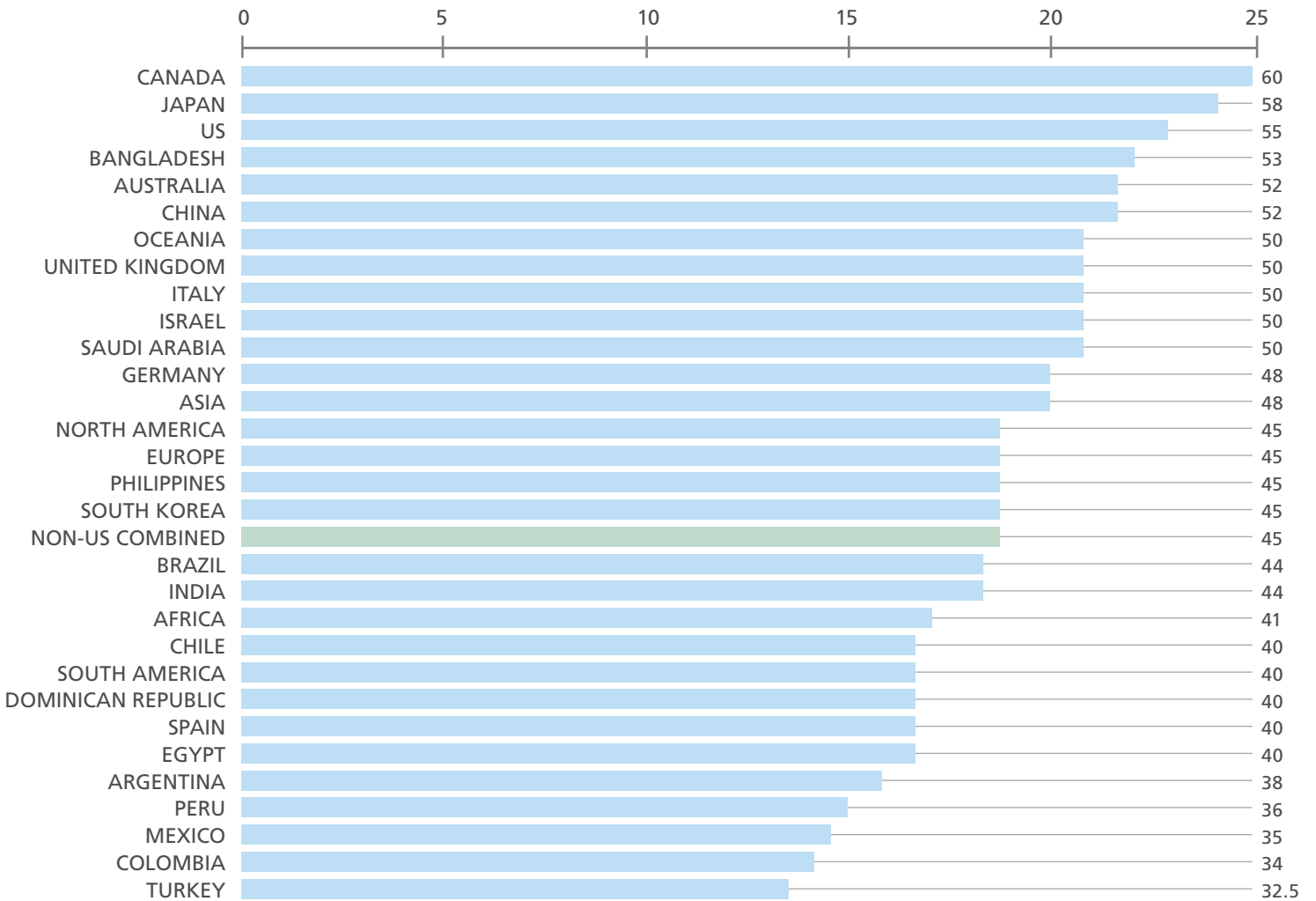


FIGURE 6

Median Number of Clinical Hours Directly Related To Patient Care in a Typical Week

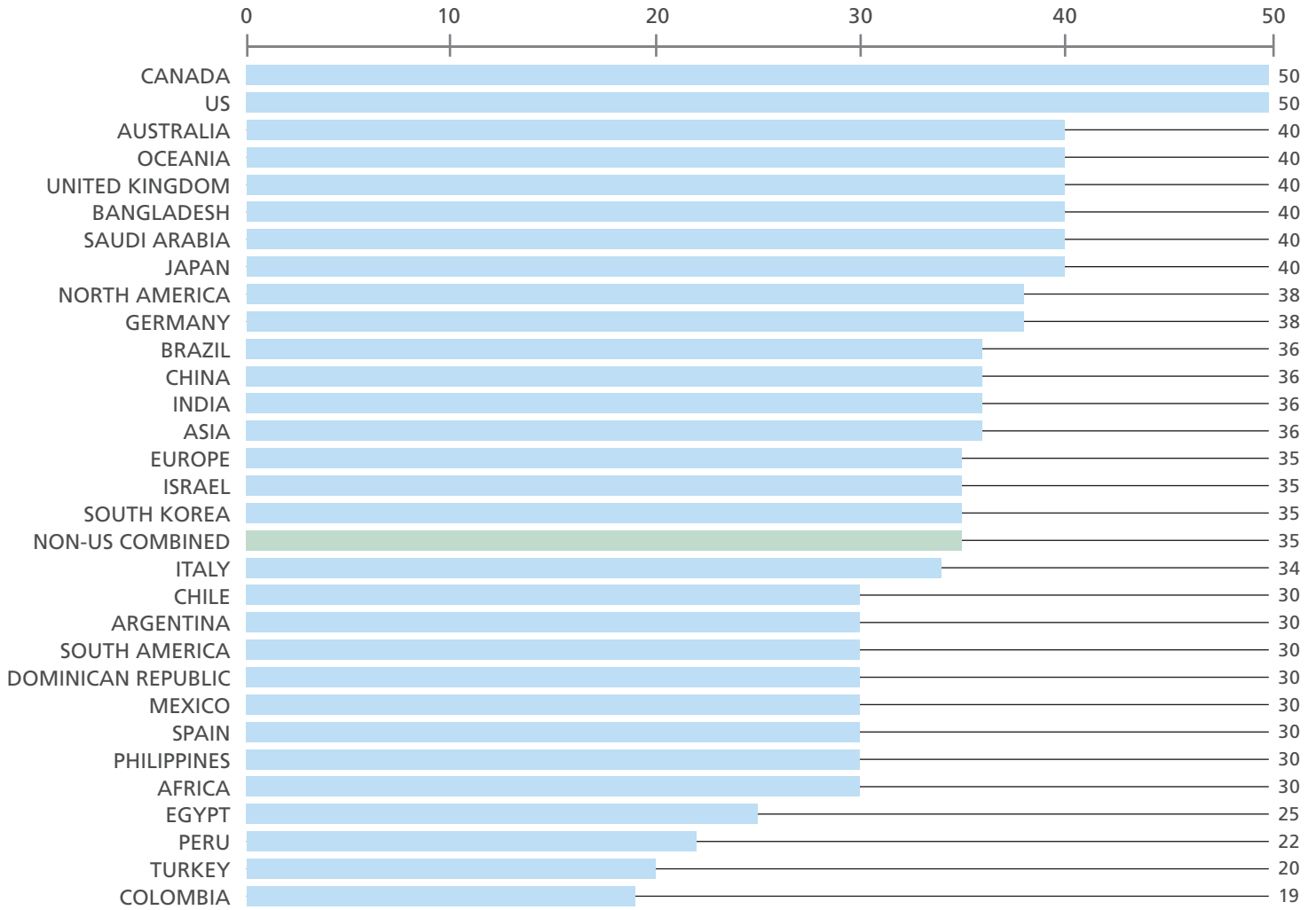
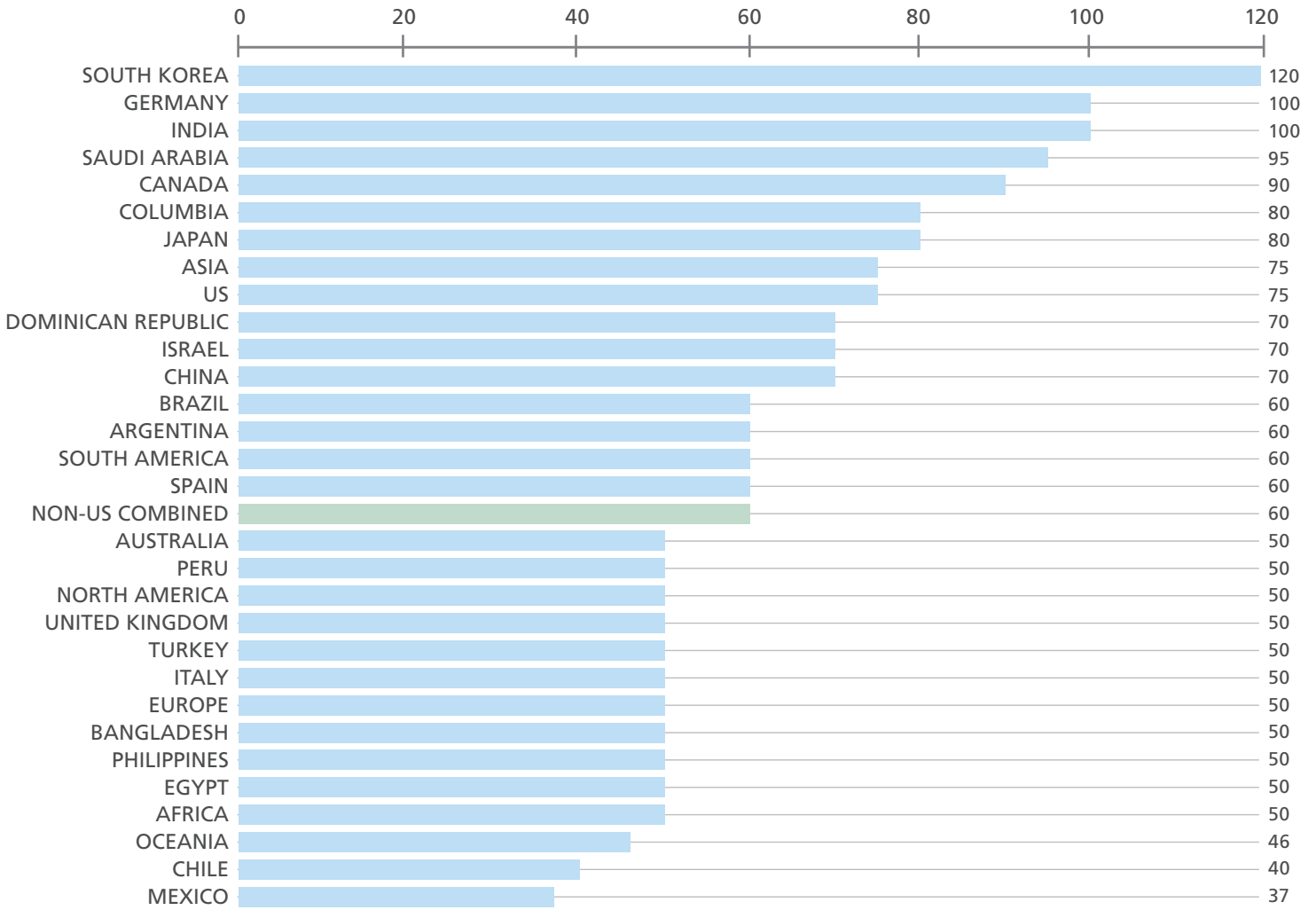


FIGURE 7

Median Number of Patient Encounters in a Typical Week



As shown in Figure 8, median size of practice varies greatly from Egypt (22 urologists), China (13 urologists) and Japan (11 urologists) to India (2), Mexico (2), the Dominican Republic (2), Australia (1) and the Philippines (1). Practicing urologists are most likely to work in private practices in Australia (81.0 percent), the Philippines (66.2 percent) and the United States (62.8 percent) and least likely to work in private practices in Egypt (9.1 percent), Turkey (8.8 percent) and Italy (2.9 percent). Practicing urologists who are most and least likely to be employed by others are in Saudi Arabia (90.9 percent), the United Kingdom (87.5 percent) and South Korea (86.7 percent) vs. the Philippines (3.1 percent), Australia (9.5 percent) and Brazil (10.8 percent), as shown in Figures 9 and 10.

FIGURE 8

Median Number of Practicing Urologists per Practice

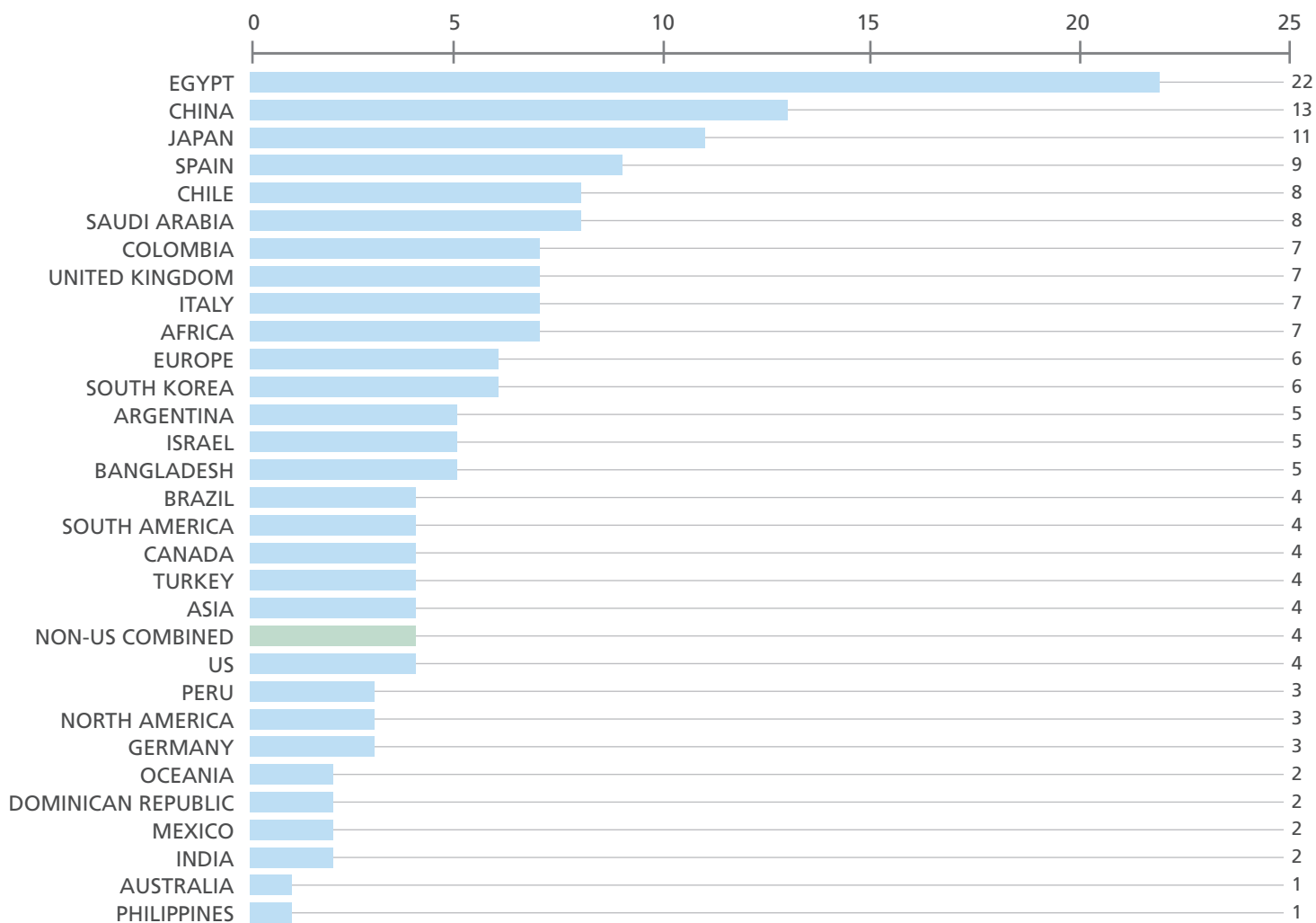


FIGURE 9

Percent of Practicing Urologists in Private Practice

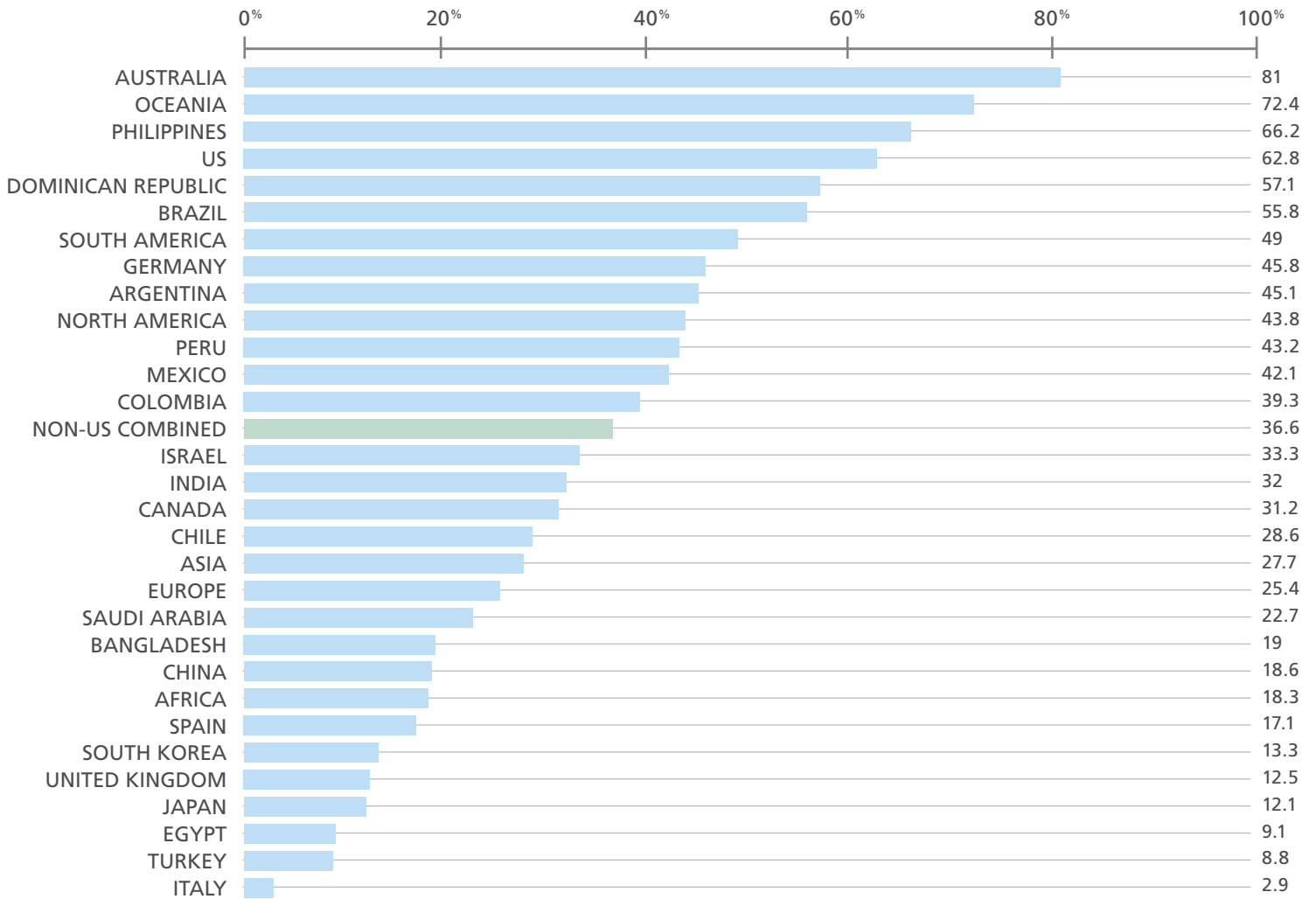


FIGURE 10

Percent of Practicing Urologists Who Are Employees Only

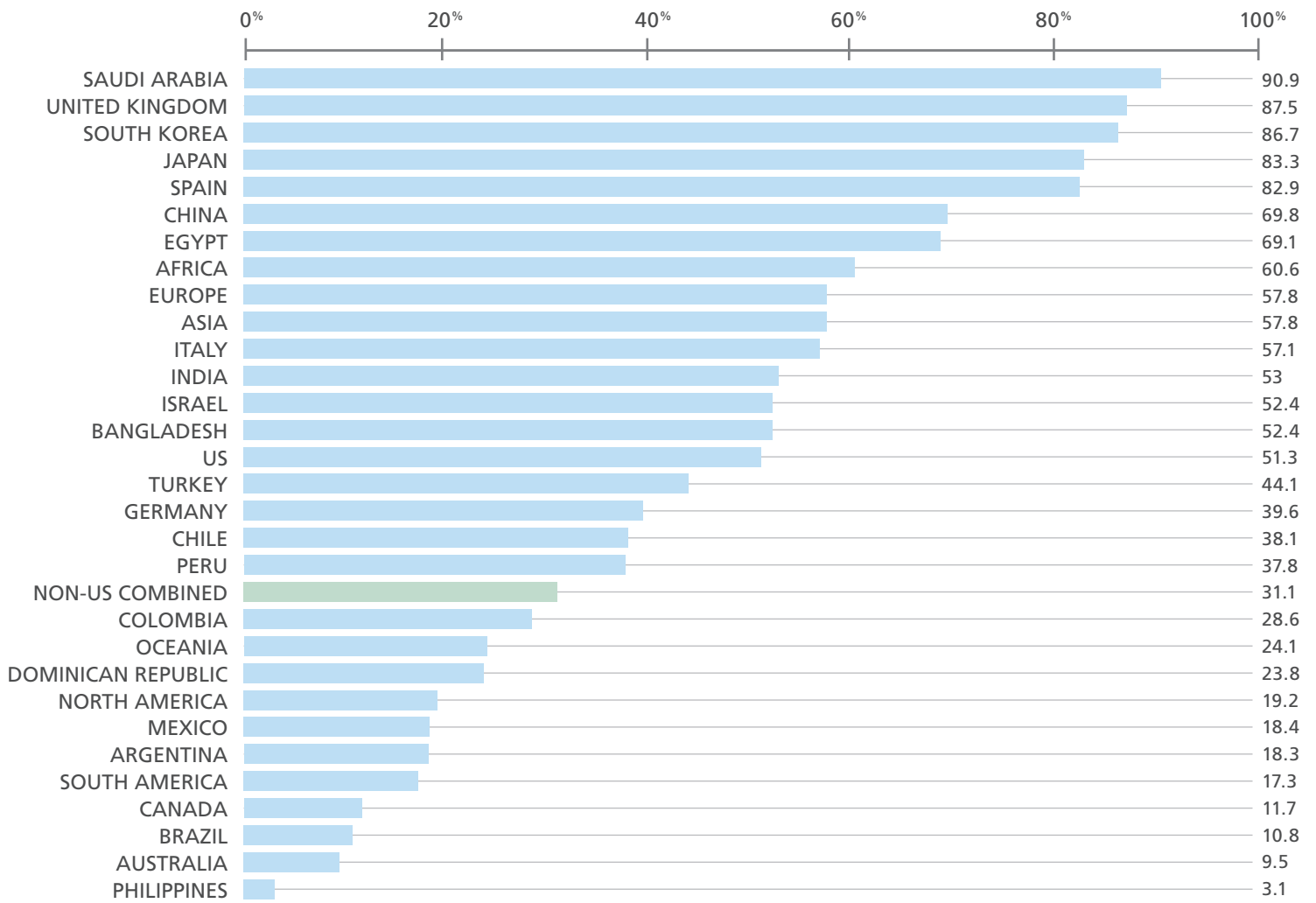


Table 2 shows that subspecialty areas are consistent across the globe, with the top four being 1) oncology, 2) endourology/stone disease, 3) laparoscopic surgery, and 4) erectile dysfunction.

TABLE 2

Common Subspecialty Areas

Area	Most common subspecialty	2nd common subspecialty	3rd Common subspecialty
United States	Oncology	Endourology/Stone Disease	Erectile Dysfunction
Non-U.S. Combined	Oncology	Endourology/Stone Disease	Erectile Dysfunction
Africa	Endourology/Stone Disease	Oncology	Erectile Dysfunction
Egypt	Endourology/Stone Disease	Oncology	Pediatrics
Asia	Oncology	Endourology/Stone Disease	Laparoscopic Surgery
India	Endourology/Stone Disease	Oncology	Laparoscopic Surgery
Japan	Oncology	Laparoscopic Surgery	Endourology/Stone Disease
China	Oncology	Laparoscopic Surgery	Endourology/Stone Disease
South Korea	Oncology	Endourology/Stone Disease	Laparoscopic Surgery
Philippines	Endourology/Stone Disease	Oncology	Male Infertility
Saudi Arabia	Endourology/Stone Disease	Male Infertility	Erectile Dysfunction
Bangladesh	Endourology/Stone Disease	Oncology	Male Genitourinary Reconstruction
Israel	Oncology	Endourology/Stone Disease	Erectile Dysfunction
Europe	Oncology	Endourology/Stone Disease	Erectile Dysfunction
Germany	Oncology	Endourology/Stone Disease	Erectile Dysfunction
Spain	Oncology	Laparoscopic Surgery	Endourology/Stone Disease
Italy	Oncology	Endourology/Stone Disease	Laparoscopic Surgery
Turkey	Endourology/Stone Disease	Oncology	Erectile Dysfunction
United Kingdom	Endourology/Stone Disease	Erectile Dysfunction	Oncology
North America	Endourology/Stone Disease	Oncology	Erectile Dysfunction
Canada	Endourology/Stone Disease	Oncology	Laparoscopic Surgery
Mexico	Endourology/Stone Disease	Oncology	Erectile Dysfunction
Dominican Republic	Endourology/Stone Disease	Oncology	Erectile Dysfunction
South America	Endourology/Stone Disease	Oncology	Erectile Dysfunction
Argentina	Oncology	Endourology/Stone Disease	Erectile Dysfunction
Brazil	Endourology/Stone Disease	Oncology	Erectile Dysfunction
Peru	Endourology/Stone Disease	Oncology	Laparoscopic Surgery
Colombia	Oncology	Endourology/Stone Disease	Laparoscopic Surgery

Chile	Oncology	Endourology/Stone Disease	Laparoscopic Surgery
Oceania	Oncology	Endourology/Stone Disease	Erectile Dysfunction
Australia	Oncology	Endourology/Stone Disease	Erectile Dysfunction

Figures 11, 12 and 13 show other professional roles that practicing urologists took as educators, researchers, or practice managers. Practicing urologists are most likely to be educators in Chile (23.8 percent), Egypt (23.6 percent) and Canada (20.8 percent), whereas practicing urologists are least likely to serve as educators in Australia (0.0 percent), Italy (2.9 percent) and the United Kingdom (4.2 percent). Practicing urologists are most likely to be researchers in Canada (24.7 percent), Egypt (21.8 percent) and Japan (19.7 percent) and least likely to be researchers in the United Kingdom (0.0 percent), the Dominican Republic (0.0 percent) and the Philippines (3.1 percent). The percentages of practicing urologists as practice managers are higher in Canada (7.8 percent), Egypt (7.3 percent) and Brazil (6.8 percent) and not reported in the United Kingdom, the Dominican Republic, Peru, Spain and Germany.

FIGURE 11:
Percent of Practicing Urologists with a Concurrent Professional Role as an Educator

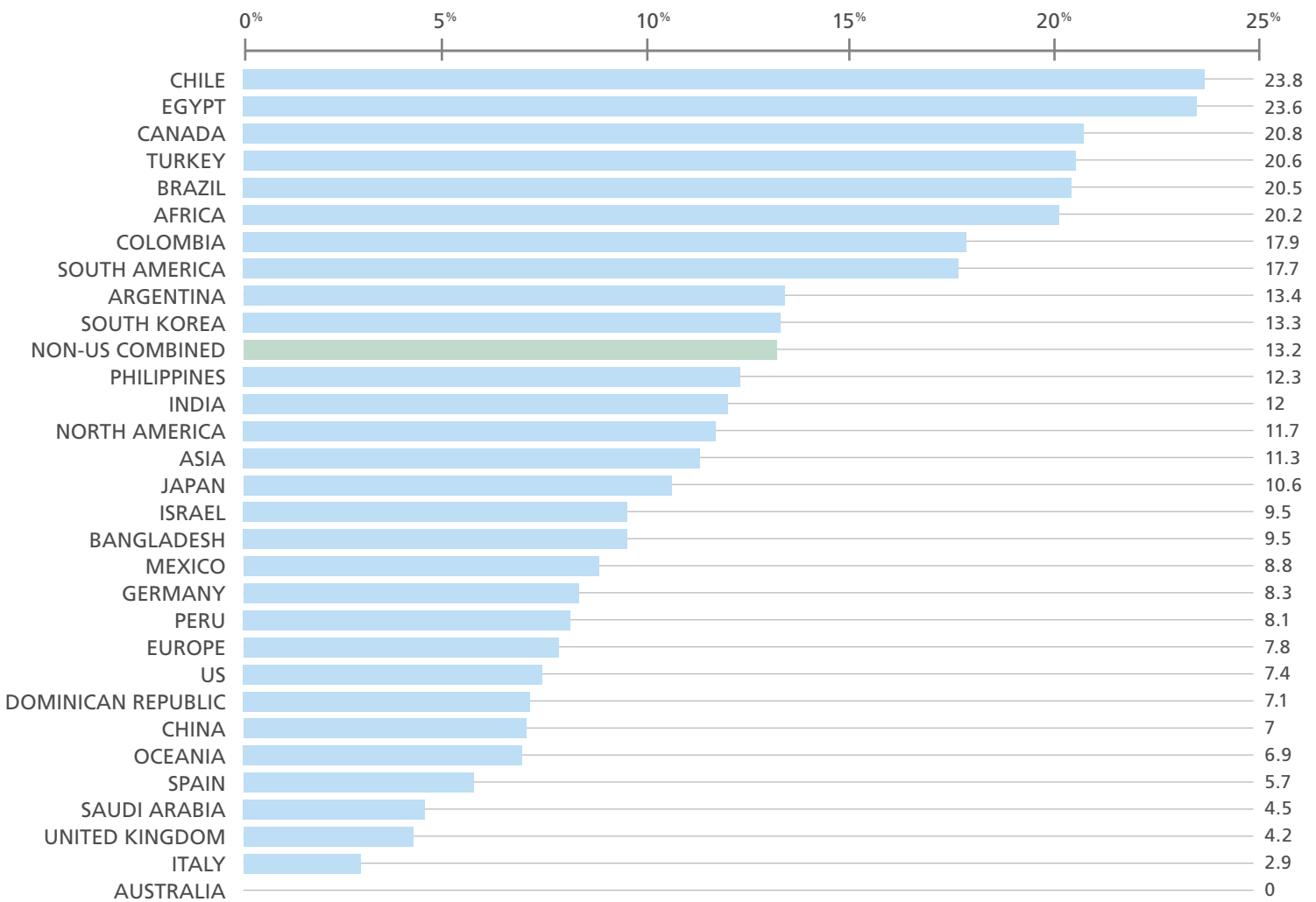


FIGURE 12

Percent of Practicing Urologists with a Concurrent Professional Role as a Researcher

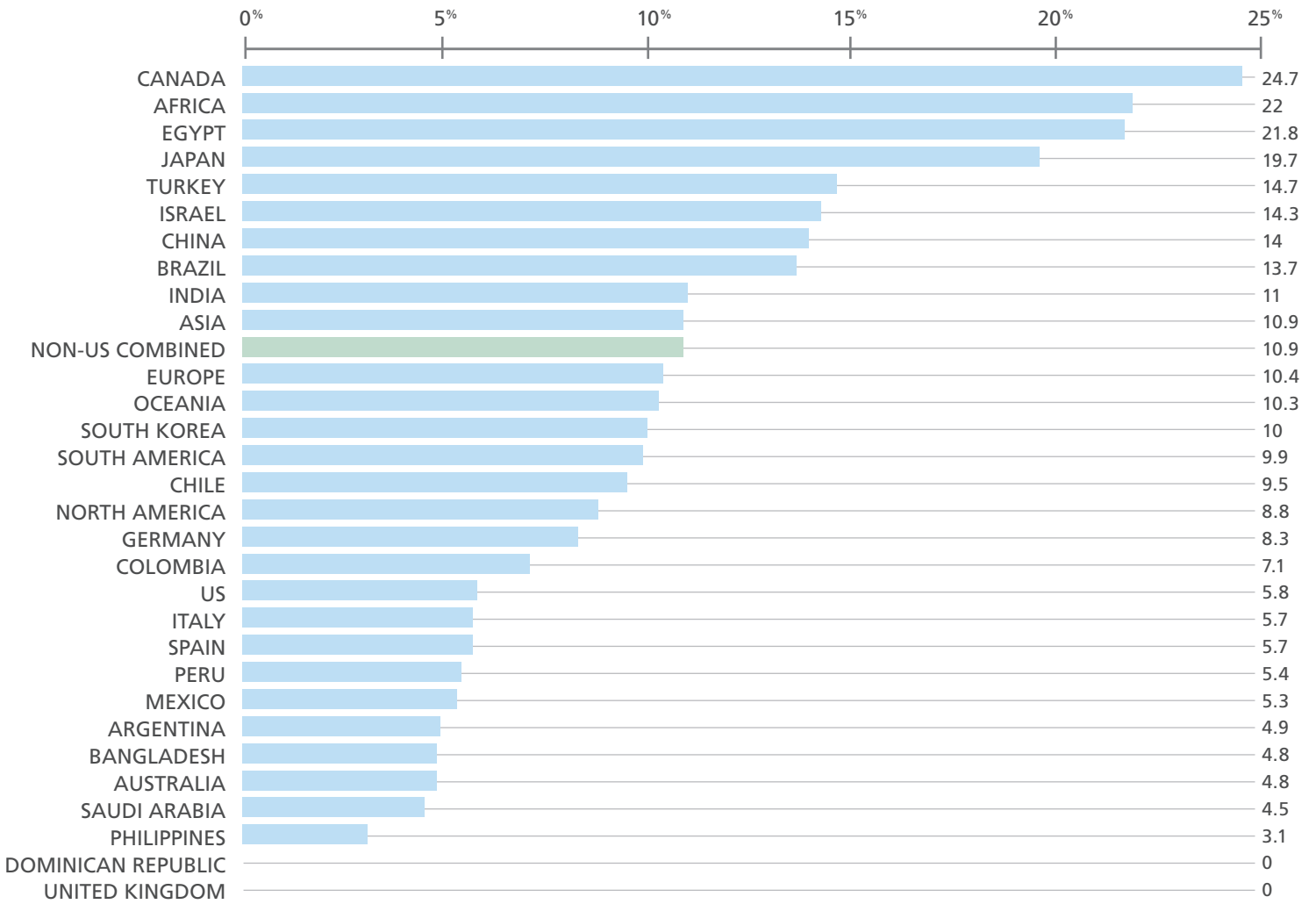
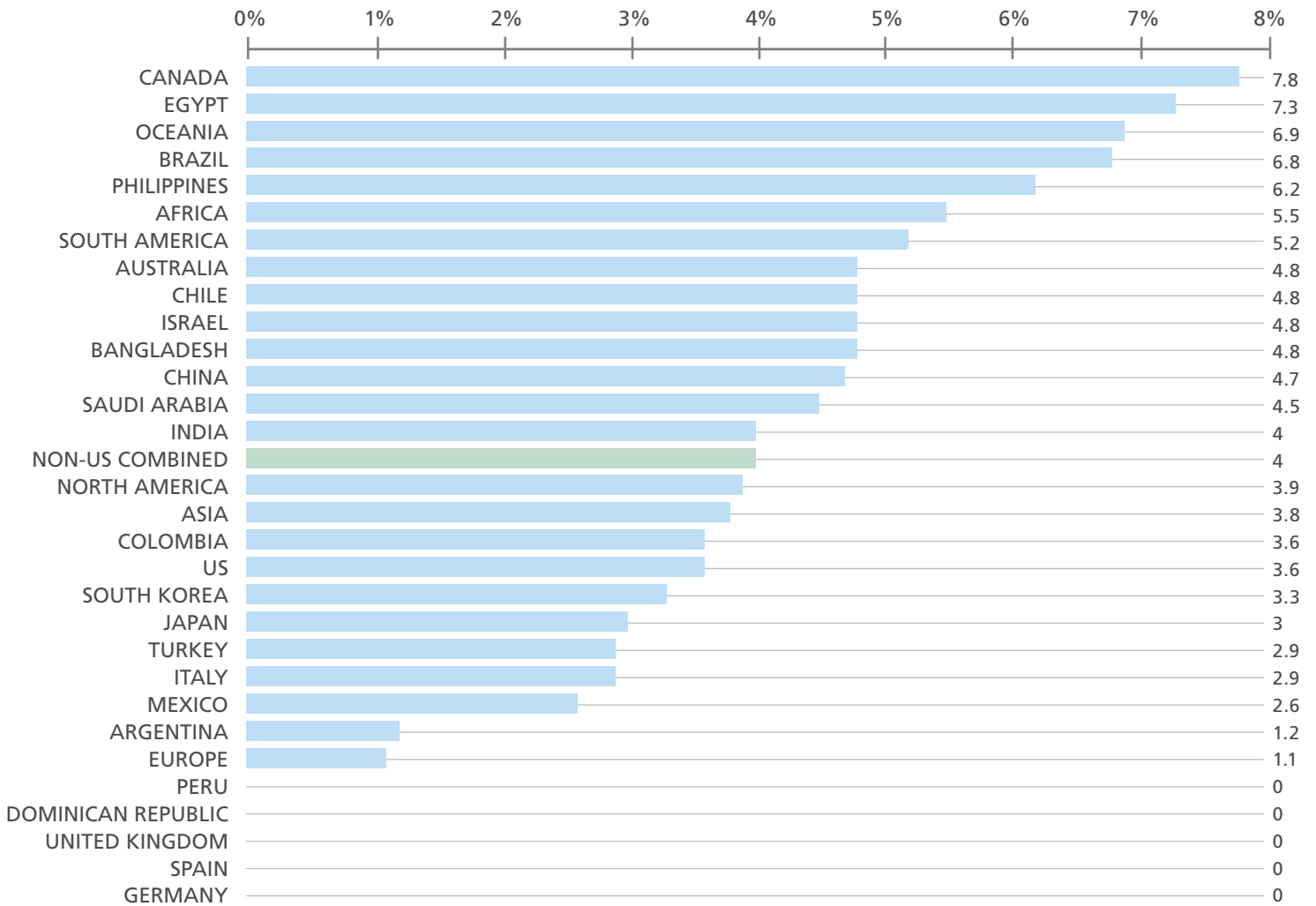


FIGURE 13

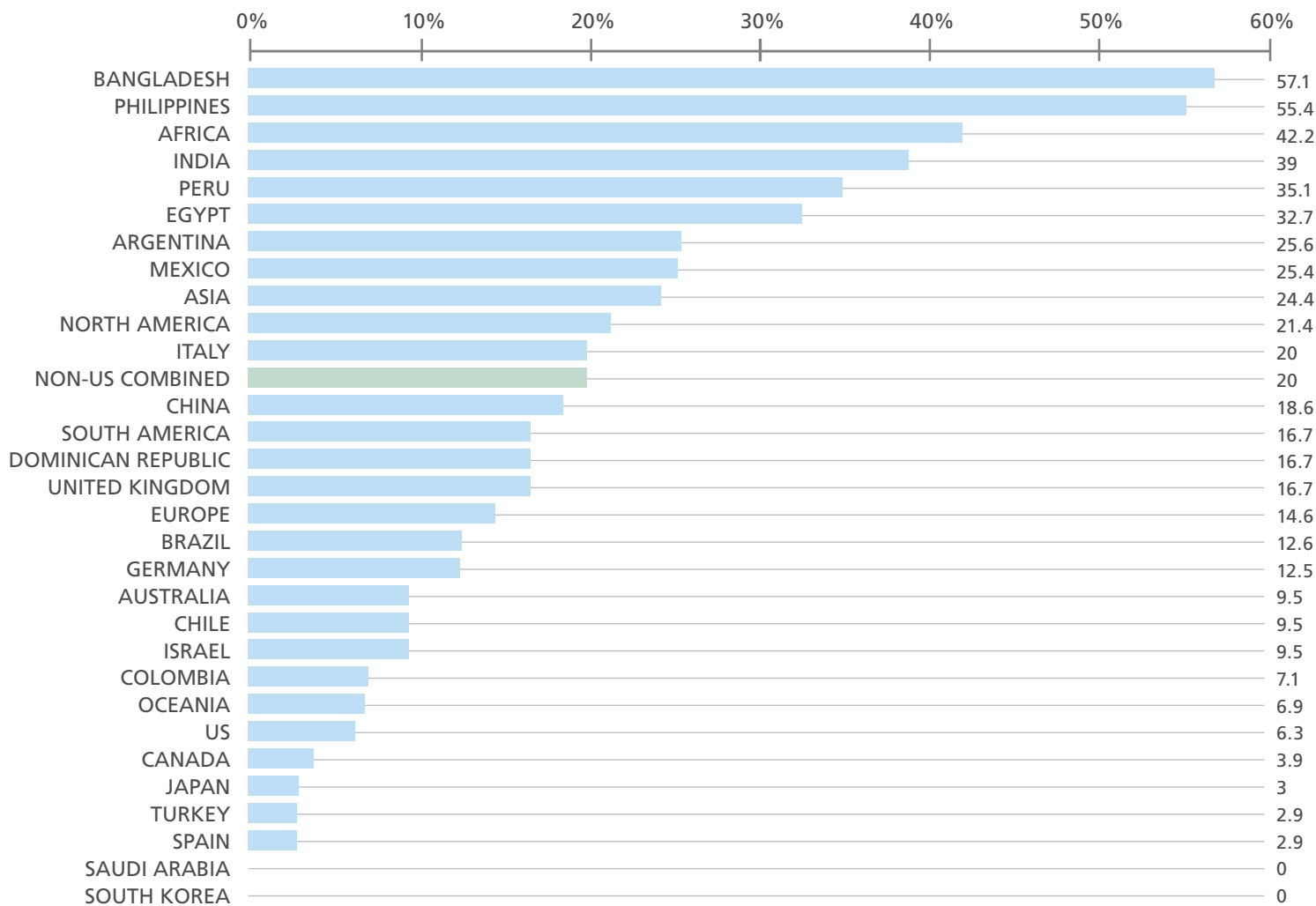
Percent of Practicing Urologists with a Concurrent Professional Role as a Practice Manager/Administrator



Use of paper health records only was more common in Bangladesh (57.1 percent), the Philippines (55.4 percent) and India (39.0 percent) and rarely seen in Saudi Arabia (0.0 percent), South Korea (0.0 percent), Spain (2.9 percent) and Turkey (2.9 percent), as seen in Figure 14.

FIGURE 14

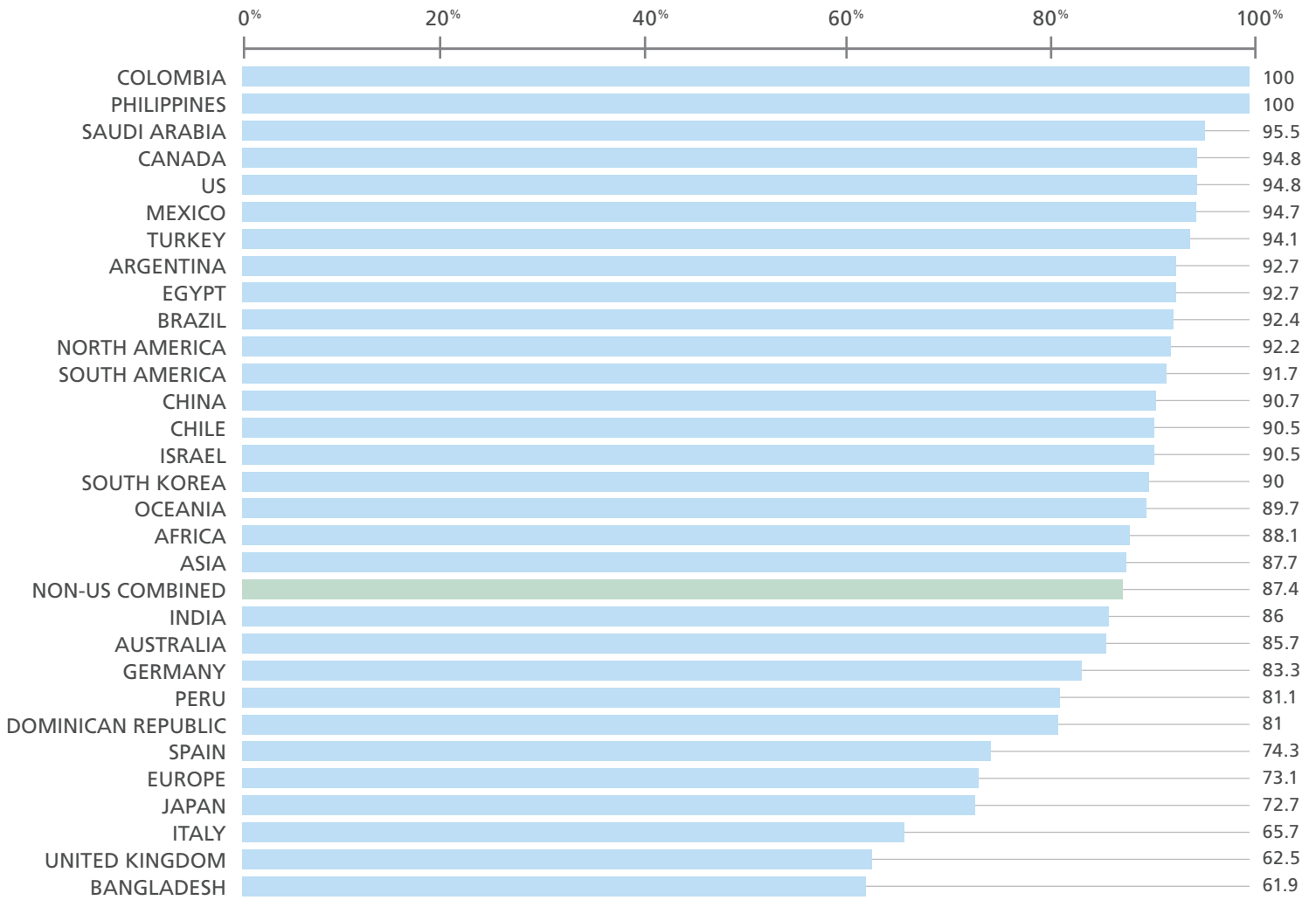
Percent of Practicing Urologists Who Use Only Paper Medical Records



As shown in Figure 15, most practicing urologists in the world utilize AUA clinical guidelines when making clinical decisions, most commonly in the Philippines (100.0 percent), Columbia (100.0 percent) and Saudi Arabia (95.5 percent) and less commonly in Bangladesh (61.9 percent), the United Kingdom (62.5 percent) and Italy (65.7 percent).

FIGURE 15

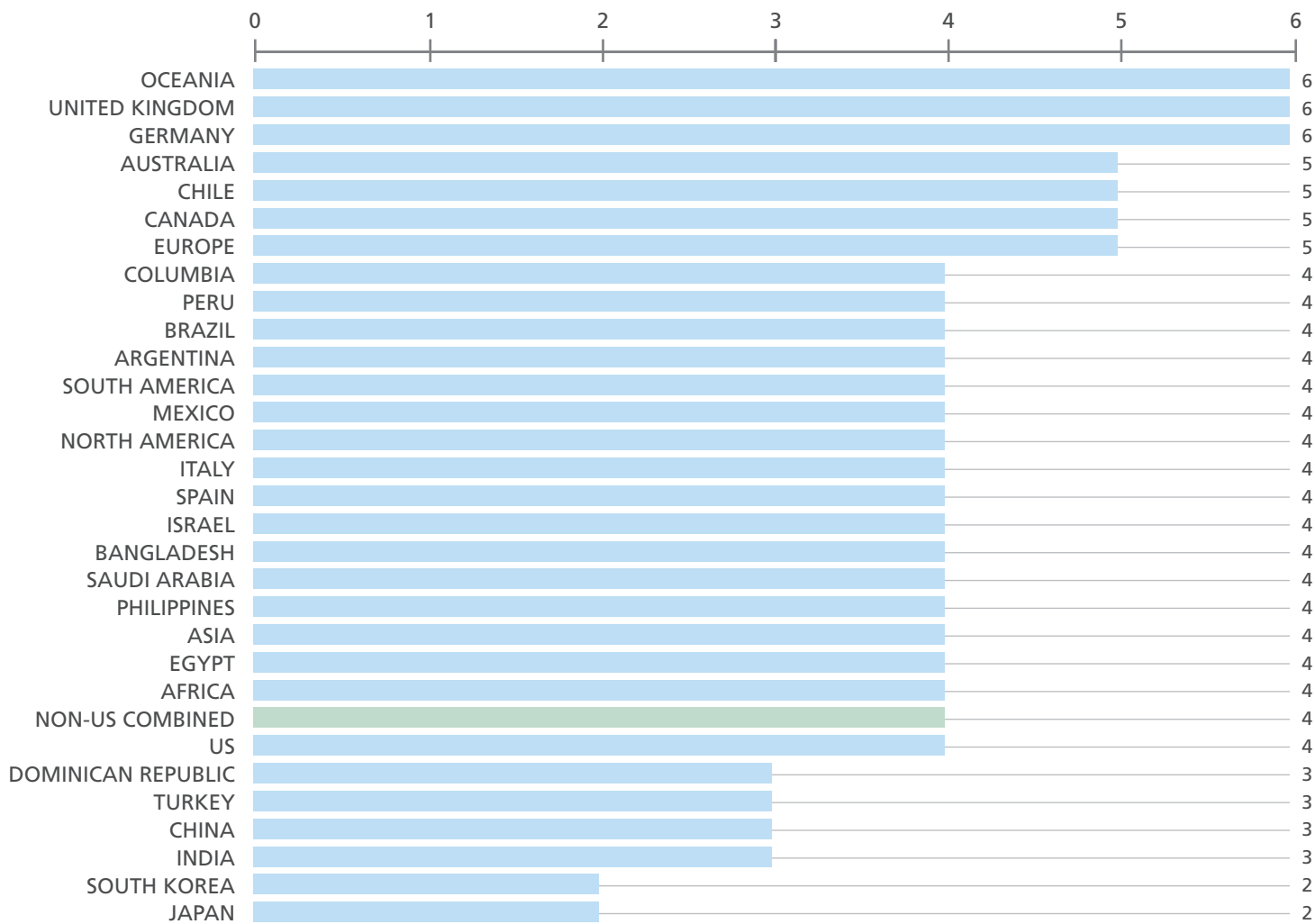
Percent of Practicing Urologists Who Use AUA Guidelines in Clinical Decision Making



In addition, practicing urologists in Japan and South Korea only took two weeks of vacation leave per year, whereas their counterparts in both Germany and the United Kingdom took six weeks of vacation leave a year, as shown in Figure 16.

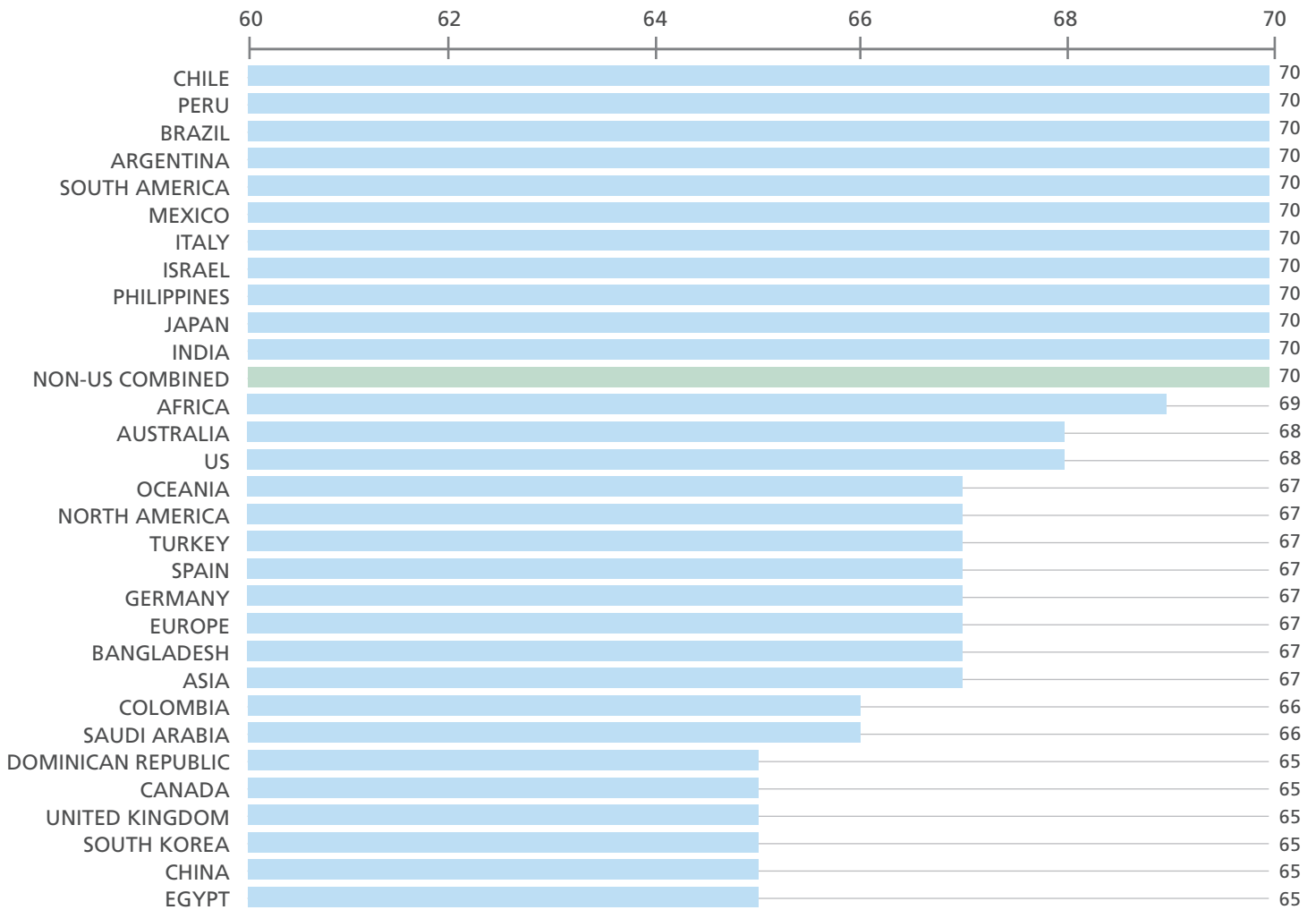
FIGURE 16

Median Number of Weeks of Vacation Leave in the Previous Year (2014)



As shown in Figure 17, the median planned retirement ages fall into a five-year range as high as 70 in Chile, the Philippines, Mexico, Argentina, Brazil, Israel, Peru, Italy, India and Japan and as low as 65 in the United Kingdom, Canada, Egypt, China, the Dominican Republic and South Korea.

FIGURE 17
Median Age at Planned Full Retirement from Practice



CONCLUSIONS

In this study, practicing urologists in 106 countries were compared at both the continent level and selected country level with regard to the key issues affecting the urologist workforce. Variations in workforce characteristics and practice patterns across countries and continents are observed.

Population growth and aging, health care reform and improvement, new therapeutic possibilities, and rising expectations of health care values feature prominently among several critical challenges facing the health care workforce. These challenges have made the provision of health care much more complex than in the past. To address various challenges and meet global needs for urological care, one must understand urologists: their demographics, training, sub-specialization, practice setting, employment status, workload and productivity, adoption of new techniques, and adherence to clinical guidelines.

The results of the AUA Annual Census are subject to limitations. First, the United States (U.S.) is the only country with a national urologist master file and large samples available to this study. As such, estimates were weighted to represent the U.S. practicing urologist population through the adjustment of non-response; however, estimated values for other countries were based on samples only due to lack of country-specific urologist master files and, therefore, may not represent the true landscape of urologists in these countries. Second, sample sizes vary greatly from country to country, which may result in bias due to small sample size, and this variation also makes it difficult to detect statistically significant differences among countries with low Census response counts, especially those with samples of 20 or fewer. Third, non-U.S. practicing urologists who connected with the AUA through membership, Annual Meeting or other education activities may differ from practicing urologists in their countries in many ways, such as concurrent professional roles as researchers and educators. Fourth, census data were self-reported, non-validated, and subject to the usual survey biases and misrepresentation. Finally, the AUA Annual Census questionnaire was in English only; thus, the results from this study may be subject to language barrier bias.

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ABOUT THE AUA DEPARTMENT OF DATA AND STATISTICAL SERVICES

The AUA Department of Data and Statistical Services, under the direction of the AUA Data Committee, is committed to transforming urologic care through the meaningful collection and use of data.

To support urologic research, the Department offers comprehensive professional data analysis and statistical consulting services that include, but are not limited to, study design, data collection and linkage, data analysis and statistical modeling and support of the development of conference abstracts, presentation slides and manuscripts. Services are fee-based, and members receive discounted rates as part of the AUA's member benefits. The AUA ensures satisfaction with current best practices: prompt turnaround times, state-of-the-art methods, expertise in clinical and health services research and publication.

Additionally, the Department operates five other Data Programs: AUA Annual Census, AQUA Registry, AUA Data Grants, Urologic Data Repository, Knowledge Generation and Dissemination. Each Data Program generates products and services that focus on innovation, member value and policy impact.

Should you need any data or statistical support, please contact AUA at dataservices@auanet.org.