Chapter 3
Healthcare Systems Around the World

Ivan Cancarevic, Lucia Plichtová, and Bilal Haider Malik

The General Outline of the US Healthcare System

The US Healthcare System

It is frequently said that the USA is the only developed country in the world without a universal healthcare system and that medical bills are among the leading causes of bankruptcy, poverty, and even homelessness in the USA. Currently, the World Bank defines 80 countries around the world as "high-income economies," and their healthcare systems vary widely [1]. Some systems are entirely or almost entirely governmental and funded through taxes, while the rest involve some mix of private and public healthcare. In that aspect, the USA is no exception to the rule. While most Americans receive healthcare through their employers, a number of Americans are insured through one of the taxpayer-funded programs, such as Medicare or Medicaid.

I. Cancarevic (✉)
California Institute of Behavioral Neurosciences and Psychology, Fairfield, CA, USA

L. Plichtová
Hospital Department of Medicine, Bridgeport, CT, USA

B. H. Malik
CiBNP, Fairfield, CA, USA

Institute of Behavioral Neurosciences and Psychology, Fairfield, CA, USA

Internal Medicine, Research, California Institute of Behavioral Neurosciences & Psychology, Sacramento, CA, USA

H. Tohid, H. Maibach (eds.), *International Medical Graduates in the United States*, https://doi.org/10.1007/978-3-030-62249-7_3

Private Healthcare

Most health insurance in the USA is offered by a number of private insurance companies. Most Americans receive healthcare through their employers, while a significantly smaller number pays for the insurance individually, out of pocket. Students often receive health insurance through colleges they attend. A number of different health insurance plans exist, and they differ based on the costs and the amount of coverage that is provided. It should be noted that health insurance companies in the USA are for-profit institutions [2, 3]. The existence of "networks" is one of the unique features of the US healthcare systems. Insurance companies have networks of providers that they are affiliated with and whose services they cover. Seeing an out-of-network physicians is often either not covered by the insurance company or covered to a much smaller extent than seeing a physician in-network [2, 3].

Different employers may offer widely different healthcare plans. Moreover, the physician networks that the insurance companies are affiliated with may be very different, impacting the continuity of care when changing employers. Those who lose their jobs may be at risk of losing health insurance unless they purchase individual plans. The coverage of preexisting conditions has been a topic of much debate as most insurance providers used to reject patients with preexisting conditions or at least rejected the coverage of any complications that may be deemed related to those conditions. In 2010, the Affordable Care Act (ACA) was signed into law during the presidency of Barack Obama (sometimes referred to as "Obama Care") which aimed to fix some of the aforementioned issues. It provided tax credits and certain cost reductions for low-income families. It also requires most individuals to purchase health insurance and penalizes many of those who do not. Large employers are now required to offer health insurance, and the insurance companies' ability to reject people based on preexisting conditions was limited. It also expanded some of the taxpayer-funded programs [3].

Even those who have health insurance are frequently required to pay significant fees when seeing their physicians, in form of deductibles and copayments [2, 3]. Deductibles refer to the amounts patients are required to pay before the insurance starts covering their bills, while copays refer to payments associated with individual visits. There are often additional costs associated with prescription drugs, emergency services, and vision and dental care. Many individuals purchase additional vision and dental insurance.

Most of the hospitals in the USA are nonprofit private institutions with a number of for-profit and government-run hospitals. The majority of physicians in the USA practice in small offices rather than large hospitals [3].

Medicare

Medicare is the most widely known governmental health insurance program in the USA. It covers individuals over the age of 65, those with certain disabilities and end-stage renal disease (ESRD). Approximately 16% of American citizens receive

healthcare coverage through Medicare [3]. Medicare A, B, and D plans are defined. Plan A covers hospital stays, care in nursing facilities, hospice care, and some home healthcare. Plan B covers outpatient care, preventive care, and medical supplies. Part D adds coverage for prescription drugs. It should be noted that Part D is offered through private companies approved by Medicare. It should be noted that the individuals who receive healthcare through Medicare are not exempt from all further healthcare costs and some deductibles and copays still apply to them [4].

Medicare is overall very popular and most of the enrollees are satisfied with the coverage they receive. A high satisfaction rate among Medicare users has prompted a national debate on switching to "Medicare for All," a governmentally funded single-payer healthcare system. The idea was first brought to public attention by the 2016 (and 2020) presidential candidate Bernie Sanders and has become more mainstream ever since. A number of other high-profile politicians now support moving toward universal healthcare, including 2020 presidential candidates senator Elizabeth Warren and New York mayor Bill de Blasio. The polls on the issue are mixed but it is clear that the policy is gaining more and more public support.

Medicaid

Medicaid is the largest federal and state program that aims to provide health insurance to those with insufficient incomes to pay for regular private insurance. It is means tested and currently covers those with incomes up to 133–138% of the poverty line. It was significantly expanded during the implementation of the Affordable Care Act in terms of both funding and eligibility [3]. Unlike Medicare, Medicaid funding comes both from the federal government and from individual states. Therefore, the exact details of Medicaid benefits differ between individual states [3]. Many consider it to be inadequate in terms of providing healthcare to those most disadvantaged. Also, a number of people are likely to lack resources to pay for private health insurance despite earning more than what would make them eligible to enrol in Medicaid.

Veterans Health Administration

Veterans Health Administration is a nationalized health insurance program aimed at providing healthcare to veterans. It is entirely operated by the federal government, rather than private companies. All the hospitals in the system are owned by the government, and the physicians working in those facilities are paid by the government. There are no deductibles, although some copayments may exist [5]. Questions remain about the quality of care received by those in the system as well as about the timely access to healthcare. Despite those concerns, a large majority of veterans is not dissatisfied with the quality of healthcare received through the program.

Furthermore, the majority of patients reported improved quality of care received over the last decade, and most reported having no issues obtaining appointments in timely manner [6].

The Affordable Care Act Debate

Healthcare is among the most heated political topics in the USA at the time of this writing. The approach to healthcare in general differs significantly between the voters of the two main political parties. The majority of the Republican politicians and voters believe that the government should not be involved in providing healthcare to citizens and would prefer the system to be left to the private market. On the other hand, most Democratic politicians and voters believe in much stronger safety nets and fear that leaving the system to the market could lead to large numbers of avoidable deaths and disabilities. Most Democratic politicians support significant expansions to the current governmental system, with most supporting the introduction of the "public option" – a governmentally funded healthcare plan that individuals could enrol in [7]. A few prominent politicians, such as Bernie Sanders and Elizabeth Warren, believe that the ultimate goal needs to be the implementation of a universal healthcare system, such as "Medicare for All" [7].

Such large differences in opinion have led to years of debate following the passage of the Affordable Care Act. The administration of president Donald Trump has promised to turn back the clock on the ACA and came within one senate vote of successfully doing so. Despite being unable to completely transform the system, the administration did manage to eliminate the "individual mandate" as well as the cost-sharing reduction subsidies to insurers. The funds to ease new sign-ups to the plan have been significantly reduced, and individual states have been allowed to add "work requirements" to Medicaid eligibility [8].

Healthcare Outcomes in the USA

Healthcare outcomes are difficult to compare between countries, in part because it is difficult to establish the appropriate criteria and the number of possible confounding variables is significant. The life expectancy at birth in the USA is around 79 years compared to 80 in the European Union and 82 in Canada [9]. The infant mortality rate in the USA is higher than in most other high-income countries [10]. It is estimated that tens of thousands of Americans die every year due to inadequate health coverage. The chronic disease burden and obesity rates are higher in the USA than in comparably wealthy countries, and the rates of violent crime and suicide are higher. Cancer survival in the USA is often considered among the best, if not the best in the world. Interpreting such data is tricky, however, as cancer survival rates

depend heavily on the age when the cancer was first diagnosed, whether all institutions in the country are equally likely to report the cases they encounter and what other risk factors might impact cancer survival. While the rates of obesity in the USA are among the highest in the world, many European countries have higher tobacco and alcohol consumption rates than the USA, and their populations may be older. However, as home to some of the most elite research institutions in the world, the USA is at the forefront of medical research, and it has more Nobel laureates in physiology and medicine than any other country. The availability of some of the novel treatments may be higher in the USA than in the other countries [11]. The exact impact of that on morbidity and mortality is difficult to quantify, but it may very well be the case that the USA offers the best healthcare for those who can afford it.

Costs of the US Healthcare System

The Total Spending

The US healthcare system is among the most expensive in the world. While the exact costs are difficult to determine, a mix of administrative, legal, and medical costs is what makes the system that expensive [3].

The US spending on healthcare grows every year, and it reached 3.6 trillion US dollars in 2018, which equates to over 11,000 USD per person per year [3, 12]. It accounts for anywhere between 15 and 20 percent of the nation's gross domestic product (GDP). The average annual growth rate is at over 5 percent, meaning that it is expected that by 2028 the total healthcare spending could rise to over 6 trillion US dollars [13]. Such growth is higher than the average GDP growth, meaning that the percentage of GDP that is spent on healthcare is likely to increase as well. Female healthcare spending is on average higher than male healthcare spending (56% to 44%), and it holds true in all age groups except for children [14]. The spending also varies significantly between individual states, with the states in New England and Mideast reporting on average the highest levels of total per capita personal healthcare spending. Utah reported the lowest levels [15].

It should also be noted that the total spending varies depending on the payer. It is expected that Medicare spending is going to increase significantly due to aging of the population. This is especially evident in the eastern USA, with New Jersey being the state with the highest Medicare spending per enrollee.

The total spending in other developed countries is generally lower than in the USA. The UK spends less than 10% of its GDP on healthcare, which in 2017 turned out to be under 4000 USD [16]. In Canada the number is under 5000 USD, and in Australia it is under 6000 USD [16]. Swiss healthcare spending at around 10,000 USD per capita per year was the second highest in the world [16]. The World Bank average for high-income economies was 5179.67 USD [16].

How Much Individuals Spend on Healthcare

Almost 10% of the US population is considered uninsured [3]. This population is at constant risk of bankruptcy or even homelessness as a result of illness. A significant portion of those who have insurance are considered "underinsured," meaning that their insurance is likely inadequate to cover their healthcare needs. While insurance companies, and especially Medicare, are able to negotiate the prices with healthcare providers, individuals who have to pay out of pocket generally are not able to do so. As a result, patients who pay out of pocket tend to pay more than what an insurance company would pay for the same procedure or treatment [3].

The costs of individual procedures or treatments in the USA are also generally higher than in other developed countries. For example, an MRI scan in the USA on average costs over 1100 USD, while in Australia it costs under 200 USD [17]. In some countries, such as Spain, the number is even lower [17]. Surgical procedures in the USA are also significantly more expensive than in the rest of the developed world. Hip replacement surgeries cost on average 10,000 dollars more than in Australia [17]. Prescription drug costs in the USA are also generally much higher than in the other countries. On average, prescription drug prices in the USA are 3–4 times higher than elsewhere [17].

Can Americans Afford These Costs?

Anywhere between 25% and 50% of personal bankruptcies in the USA include significant medical debts [18]. Just having health insurance is often not enough for individuals to be able to afford healthcare in the USA. The significant deductibles, copays, and rising premiums make it unaffordable for many. Only about four in ten Americans say they would be able to cover a 1000 dollar emergency, such as an unplanned medical bill, using their own savings [19]. The average deductible is over 4500 USD [20]. This suggests that the majority of Americans would have to take out loans to pay for any medical bills as insurance typically does not cover any expenses until the annual deductible is met. That is on top of the average insurance premium of $440 per individual per month [21]. Even once the deductible is met, the patients are still required to pay copays for every visit until they meet their out-of-pocket maximum, which can be significantly higher than the deductible.

Moreover, a unique characteristic of US health insurance system is that many insurance companies offer different levels of health coverage at different price points. They may offer "bronze," "silver," "gold," and "platinum" plans with varying degrees of benefits. Some expats have compared it to choosing a credit card [22]. A paradox is that those with limited financial abilities are most likely to choose the cheapest plans which offer the fewest protections and tend to have the highest deductibles, meaning any unplanned healthcare costs may lead to debt and even bankruptcy.

Medicare and Medicaid Spending

In 2018 the US federal government spent over 750 billion US dollars on Medicare and 597 billion US dollars on Medicaid. Medicaid saw a significant increase, likely due to increased enrolment due to the Affordable Care Act [3, 23]. New Jersey is the state with the highest Medicare spending per enrollee at over 12,600 USD, while Montana is the state with the lowest Medicare spending per enrollee at just over 8200 USD [23]. For Medicaid, the state with the highest spending per enrollee was North Dakota at over 12,400 USD, while the state with the lowest spending was Illinois at under 5000 USD [23].

What Makes the US Healthcare System So Expensive?

There are many possible explanations of the high costs of healthcare in the USA when compared to similarly developed countries. Compared to most other countries, the administrative costs in the USA are much higher. Part of the reason is the existence of many different networks and insurance companies. Insurance companies also make large profits. Another possible cause of high administrative costs is the number of staff required to deal with complicated billing systems. The costs of individual treatments and procedures can vary greatly between institutions. Moreover, the frequency of lawsuits against physicians in the USA is higher than in most other countries. As a result of that, physicians often have to purchase expensive malpractice insurance to protect themselves. The fear of lawsuits also leads to increased practice of defensive medicine, meaning that patients are often subjected to a larger number of unnecessary tests in order to exclude unlikely diagnoses and decrease the likelihood of a lawsuit against the physician. Americans on average consume more diagnostic tests than patients in other high-income countries. To make matters more complicated, the medical education system in the USA is extremely expensive. Many medical schools charge more than 50,000 USD per year in tuition alone. Physician salaries are also higher than in most other countries. Most agree that a lot of that money is "wasted" and that the inefficiency of the system contributes to the costs [24].

Would Universal Healthcare Be More Expensive?

A major political debate is ongoing on whether implementation of the universal healthcare system would be a cheaper alternative in the USA. Many studies suggest that implementation of a "Medicare for All" system would lead to significant savings and drastically reduce the healthcare costs in the USA [25]. Such system would eliminate the premiums, deductibles, and copays while introducing a new

form of tax. The proponents of the change claim that such system could make US healthcare spending more in line with that of the other countries such as Canada or Australia. The opponents of the system claim that this is a false assumption as there is no clear evidence to suggest that just changing the way the system is financed would reduce the costs that significantly. Also, the current Medicare costs do not necessarily match the costs in those countries, and the proposed system goes beyond what current Medicare covers. The ultimate costs of such system would be difficult to determine as they would largely depend on the way drugs are obtained, the cuts to the administrative costs, and possible changes to the salaries of healthcare workers. Many physicians fear that a cut to their salaries could make it difficult for them to pay off significant student loans that they graduated with. It should be noted, however, that politicians most supportive of a switch to "Medicare for All system" also support free public universities and some forms of student loan forgiveness [7, 25].

Medical Workforce in the USA

The Number of Healthcare Workers in the USA

The global shortage of healthcare workers is a frequently discussed topic in the news. Most developed countries around the world report healthcare worker shortages especially in more remote and rural areas. The USA is no exception to that rule. At the end of 2015, there were just under 900,000 actively licensed physicians in the USA [26]. That includes both Doctors of Medicine and Doctors of Osteopathy. The vast majority of US physicians are allopathic [26]. It should be noted that in the USA, unlike most other countries, osteopathic physicians are allowed to practice medicine on the same terms as the allopathic physicians. They are not limited to practicing only osteopathic manipulation techniques. The number of physicians in the USA has increased by 12% between 2010 and 2016 [27]. There are currently around three million registered nurses (RNs) in the USA [28]. There are a number of reports warning of severe upcoming workforce shortages. In fact, over the next decade, the USA may need as many as 100,000 additional physicians [29]. Besides physicians and nurses, a number of other healthcare workers play an important role in the system. They include midwives, radiology technicians, laboratory personnel, speech therapists, physical therapists, occupational therapists, and many others. A recent report by CNN suggested that the USA is going to need to hire as many as 2.3 million additional healthcare workers by 2025 to keep up with the demand [30]. With the population that is rapidly increasing and getting older, there is no question that the USA is in dire need of recruiting new healthcare workers to fill the current skill gap and provide healthcare to the population.

Most of the physicians in the USA have specialized in family medicine or internal medicine (either general internal medicine or one of the subspecialties) [26]. Hundreds of thousands of physicians work in those fields. Some other fields are,

comparably, smaller. For example, there are just over 10,000 dermatologists and 7000 plastic surgeons currently in the USA [26]. Despite those numbers, it is projected that it is the primary care physicians who are going to be needed the most in the upcoming years. Part of the reason for that is the necessity for providing primary care to the population in all parts of the country, while specialist services can be based in fewer areas.

How the USA Compares with the Other Developed Countries

There are currently 2.6 physicians per 1000 residents in the USA [31]. That number is about the average for high-income economies. It is somewhat lower than the numbers reported by many countries in the European Union and slightly lower than in Australia, comparable to that in Canada and higher than in Japan [31]. An interesting fact to keep in mind is that the US population is on average younger than the population of many of the aforementioned countries. As such, it can be concluded that while the shortage of physicians in the USA is significant, the situation is not likely to be much worse than in most of the other comparably wealthy countries. Recently, the Guardian reported that anywhere between 25% and 50% of job openings for consultants (referred to as attendings in the USA) remained unfilled in the last year [32]. The shortage of nurses in Britain is also concerning, with some estimates projecting the need to hire up to 5000 additional nurses annually, which is three times the number that is hired today [33]. Following the British vote to leave the European Union, the risk of serious health staff shortages has increased dramatically as fewer European citizens feel welcome in Britain. The situation in continental Europe could worsen rapidly as well. In some countries as much as 55% of primary care physicians are older than 55. German health minister went as far as to suggest introducing regulations that would stop healthcare professionals from emigrating after a large number of German healthcare workers emigrated to Switzerland which offered significantly higher salaries. The shortage of physicians in Germany was then managed by recruiting physicians from less wealthy EU member states, which in turn ended up unable to fill the positions [34]. Romania, for example, lost almost half of its physicians in a 5-year time period [35].

The International Medical Graduates (IMGs) in the USA

For decades, similarly to most other high-income countries, the USA has relied on immigrant workers to fill the shortages in its healthcare system. However, in order for foreign physicians to be able to gain licensure to practice medicine independently in the USA, they are required to pass a series of exams taken by medical students at American medical schools followed by finishing the entire residency (specialty training) program, regardless of whether the physician in question was

already a licensed specialist in another country. With very few exceptions, all physicians in the USA have to do the entirety of their training after medical school in the USA. Therefore, the data from each year's residency application process can provide valuable insight into the extent to which the USA relies on IMGs. In 2019, almost 3000 US citizen IMGs and over 4000 non-US citizen IMGs matched into residency programs [36]. Since the match rate for graduates of US medical schools is extremely high and very few applicants fail to match every year, it appears that the USA needs to hire about 7000 physicians who have graduated abroad in order to fill their residency programs [36]. And even with all the residency positions filled, it is likely that the USA will face a significant physician shortage over the next decade.

According to the data released by the Educational Commission for Foreign Medical Graduates (ECFMG), which processes visas for foreign physicians working in US residency programs, the largest number of visas was sponsored to candidates from Canada and India with over 2300 visas for both countries, followed by Pakistan at around 1000 visas. It should be noted that some residency programs choose to sponsor their residents' visas themselves, which is not included in the statistics released by the ECFMG so the real numbers are likely to be higher. Such high reliance on healthcare workers from such a small number of countries is potentially hugely troublesome in case the supply from any of those countries decreases for any reason [37]. Physicians from India and Pakistan in particular have traditionally also moved to the UK in large numbers. As the UK becomes less attractive to physicians from continental Europe, it is likely to hire more physicians from India and Pakistan who are going to move there. Since the process of getting their credentials verified in the UK is widely considered to be easier than in the USA, it remains to be seen if a larger proportion of physicians from those countries chooses to find work in the UK. Moreover, the recent political changes may play a significant role in what happens to the physician workforce. The anti-immigrant sentiment in the USA is often perceived to be targeting communities of non-European descent, while the sentiment in the UK mostly relates to its relationship with the European Union. Such perceptions could significantly affect the physician migration in years to come.

Increased Medical School Enrolment and International Medical Graduates

For many years there have been talks about the bleak future for international medical graduates in the USA due to increased enrolment at medical schools in the USA. Due to the expected physician shortage, a number of medical schools have opened, and many of the existing ones have increased their class sizes. As such, it is expected that within the next few years, a significantly greater number of physicians are going to graduate from medical schools within the USA [38]. The number of available residency programs has not increased by a comparable margin. Since the match rate for graduates of American medical schools is significantly higher than

for graduates of foreign schools, many believe that it is going to become progressively more difficult for foreign graduates to get jobs unless the number of jobs increases proportionally. Moreover, many American physicians are opposed to increasing the number of residency programs as they fear that the relationship between supply and demand would change to their disadvantage and that their standard of living would, consequently, suffer. Some also claim that the real problem in the USA is not that the total number of physicians is too small but that the distribution of them is inappropriate. Looking at international statistics, it is easy to see where such beliefs come from. The USA has more physicians per capita than a number of other wealthy countries. It should, however, be noted that the population density in the USA is significantly lower than in most European countries so it is likely that more physicians would be needed per capita in the USA than in Europe. Australia, a country with a significantly lower population density than the USA, has more physicians per capita. Also, while increasing access to primary care in rural and remote communities is important, there are times when emergency treatment cannot be adequately provided by general internists and family physicians, and speedy access to specialist treatment may be essential.

Salaries of Physicians and Nurses in the USA

High Salary, Expensive Living

It is generally well known that physician salaries in the USA are among the highest in the world. That is especially true for specialists in some fields. Anesthesiologists, cardiologists, radiologists, and surgeons are especially highly paid, although emergency medicine physicians and dermatologists also earn more than most physicians. Many argue that such high salaries are necessary due to the debt burden most American medical school graduates enter the workforce with. Also, the costs of malpractice insurance and health insurance are high and there is a relative lack of safety nets. The costs associated with raising a family in America are also often significantly higher than in most other countries as good nurseries and schools in major metropolitan centers are expensive. Therefore, American physicians often face costs that may be either nonexistent or much lower in other developed countries.

Resident/Fellow Salaries

The first year of residency, generally referred to as "internship," is when most US medical school graduates enter the workforce. Salaries of interns are significantly lower than those of the attending physicians, and the discrepancy is higher than in many countries. There are no significant differences between what interns make

depending on the specialty they are training in. The average salary in the first year of residency is around $55,000 [39]. It should be noted that this is the gross income and taxes are deducted from it. Also, oftentimes residents have to pay portions of their own healthcare and educational costs. Nevertheless, it is still significantly higher than the median salary in the USA. In fact, the median household income in the USA is barely higher than the salary of an intern, at $63,000 [40]. Generally, the salary of residents and fellows in the USA rises every year. The average for all years of training is around $61,000, and the average for residents or fellows toward the end of their training is around $68,000 [41]. However, only around 50% of medical residents feel they are fairly compensated for their work, mostly because of the number of hours they spend at work. Around 40% of residents report spending over 60 hours a week seeing patients, and 60% report spending at least 50 hours per week seeing patients. The benefits that medical residents receive are also significant when compared to what most American workers receive. Almost all of the residency programs provide health insurance (including vision and dental) and paid time off. The majority of the programs also offer travel allowances, meal allowances, liability coverage, retirement plans, and book allowances. It should be noted, however, that medical residents often have to pay off significant amounts of student loan debt. Around a quarter of residents report having over $300,000 of debt and only 22% reported having no debt at all. Around half of all residents have more than $200,000 of debt to pay off [39].

Compared to the residents in the majority of the other high-income countries, the residents in the USA earn a good salary. The basic salary of medical residents in Australia is between A$73,000 and A$86,000. The overtime usually adds 25–50% extra [41]. Considering that the US dollar is worth more than the Australian dollar, the salaries of residents in the two countries are comparable, with Australian residents possibly earning slightly more. The salaries of trainee doctors in Germany are around 52,000 euros, which is slightly less than what residents in the USA earn [42]. In the UK the base starting salary for a newly qualified physician is around 28,000 GBP with annual increases [43]. Overtime adds to the salary and the final numbers are also similar or slightly lower than in the USA. The one country where the numbers are significantly higher is Switzerland, where residents can make more than 100,000 Swiss francs annually [44].

Attending Salaries

Once residents finish their programs and pass their specialty exams, they become attending physicians, most of whom work in hospitals and clinics around the country. The salaries of attending physicians in the USA are generally significantly higher than in the other developed countries. The average salary of primary care physicians in the USA was reported to be $237,000 per year and for specialists $341,000. On average, orthopedic surgeons reported the highest earnings, at $482,000 per year, whereas public health/preventive medicine specialists and

pediatricians reported the lowest incomes at just over $200,000. Despite the high debt burden of physicians in the USA, it is worth noting that even the lowest paid physicians earn, on average, more than three times the average household income in the USA. There is a significant gender gap. Male physicians earn on average 50,000 dollars more than female physicians. Caucasian physicians also earn on average more than others. Self-employed physicians earn on average $70,000 more than those who work for an employer. The top-earning states for physicians are Oklahoma, Alabama, Nevada, Arkansas, and Florida. Depending on the specialty, between 40% and 70% of physicians believe they are fairly compensated for their work. Emergency physicians and preventive medicine physicians are the most likely to report being satisfied with their compensation, while infectious disease specialists are the least likely. Interestingly, infectious disease specialists are also the most likely to say they would choose medicine again if they were to go back to school [45].

Those salaries are significantly higher than in the other countries. For example, in the UK, newly qualified consultants (attending physicians) earn just under 80,000 GBP per year, while those with 19 or more years of experience as consultants earn around 108,000 GBP. They can earn additional income through "clinical excellence awards" and work in private practice. It should be noted, however, that even experienced consultants in the UK earn on average less than lowest paid specialists in the USA [46]. The salaries in Australia are somewhat higher than in the UK but lower than in the USA. Senior specialists in Australia do sometimes earn close to what physicians in the USA make [47]. In Germany, salaries largely depend on the seniority and the practice setting. The average surgeon earns around 103,000 euros per year before tax, which is similar to the salaries in the UK [42]. The one exception is Switzerland where independent specialists earn on average 257,000 Swiss francs, while gastroenterologists and neurosurgeons earn more than 600,000 Swiss francs [44]. It should be noted, though, that costs of living in Switzerland are among the highest in the world, on average much higher than in the USA.

Salaries of Nurses in the USA

Nurses in the USA are also decently paid, earning significantly more than the national average. The median salary of registered nurses in the USA is around $72,000, which is higher than the median household income in the country. The state where nurses earn the most on average is California where the average annual salary is almost $107,000, almost twice as high as in the lowest-paying state, South Dakota. In general, nurses earn the most in the states on the east and west coast [48].

The starting salaries of nurses in the UK are around 25,000 GBP. The average salary is around 37,000 GBP and some senior nurses earn over 50,000 GBP [49]. With the exception of newly qualified nurses, most earn more than what is the median salary for all UK workers at around 30,000 GBP [50]. The average salary for a nurse in Australia is around A$65,000, which considering the currency difference between AUD and USD or GBP is comparable to the salaries in the UK

and lower than the salaries in the USA [51]. It should also be noted that the median income in Australia is A$48,000 [52]. The average salary for a nurse in Germany is around 30,000 euros, which is below the average wage [53]. Overall, it is clear that in most developed countries, nurses earn more than the majority of the population. In the USA, their earnings are overall comparable to those in the other countries. Nurses in the more expensive regions of the Northeastern and Western USA earn more on average, but the cost of living reduces their purchasing power.

Healthcare System in Canada

A Brief History

In early Canadian history, healthcare was administered and funded largely on a private level. This proved to be highly problematic for a large portion of the population, as unpredictable illnesses and accidents often lead to dire medical and financial consequences for middle- and lower-class citizens. It was only during the 1940s that the first provinces began to implement universal health coverage [54]. The first provincial universal healthcare plan was introduced in the province of Saskatchewan in 1947, followed closely by the Western provinces of Alberta and British Columbia in 1950 [54]. These early publicly funded plans were rather limited, initially covering only inpatient hospital-based care. The introduction of the *Medical Care Act* by the federal government in 1966 set a precedent for the national universalization of healthcare and the provision of a more comprehensive coverage of health services [54]. This bill extended publicly funded health coverage to outpatient physician services on a cost-sharing basis. Over the coming years, this new comprehensive public medical insurance program, now known as Medicare, began to gain traction across the nation and by 1972 was implemented by all of Canada's ten provinces and three territories [55].

The Role of the Government

Healthcare in Canada is regulated by three levels of government: federal, provincial or territorial, and municipal. Duties are divided between the three levels by the Canadian Constitution [54]. The role the federal government plays in healthcare is twofold. First, it funds medical services across the country by making transfer payments to its provinces and territories [54]. Second, the federal sector plays the imperative role of setting national healthcare standards and guidelines and ensuring that the core principles of Canadian healthcare are observed by all provinces and territories. The *Canada Health Act*, a pivotal legislation passed by Parliament in 1984, defines these principles as five conditions – public administration,

universality, comprehensiveness, portability, and accessibility – which a province or territory must meet in order to receive federal funding [54]. Although the federal government's involvement in the day-to-day functioning of healthcare is minimal, it does directly oversee the delivery of health services to select population groups such as First Nations and Inuit communities, as well as members of the military and inmates of federal prisons [56].

The direct delivery of most health services, on the other hand, is organized and managed by provincial and territorial governments. In accordance with the *Canada Health Act,* all services which are deemed to be medically required or necessary must be fully covered by provincial health insurance plans [56]. Each province or territory has the authority to decide which services are considered medically necessary, and as a result, coverage for various medical services has great geographical variance. The largest government health program is Medicare, which consists of ten provincial and three territorial insurance programs that must comply with the *Canada Health Act* standards [55]. While Medicare accounts for the vast majority of health spending, there are many other small public insurance programs in existence as well.

Funding and Expenditures

The Canadian healthcare system is known as a single-payer system – in which healthcare is funded publicly by the government, but most healthcare services are provided by the private sector. The amount of money Canada spends on healthcare has been steadily increasing since the 1970s. In 1975, Canada spent 39.7 billion CAD on healthcare – 7% of the total GDP, averaging 1715 CAD per person [57]. To compare, in 2019 Canada's total health expenditure was 264 billion CAD (growing by 4.2% from 2018), 11.6% of the GDP, and 7068 CAD per person [57, 58]. Total health spending is highest in older age groups, and the average spending on residents over age 80 is 7 times greater than for those below age 65 [59]. Nearly 60% of the total health expenditure is spent on three categories of services: 26% on hospitals, 15% on pharmaceuticals, and 15% on physicians [57]. Since the 1970s, the share of expenditures for hospitals and physicians has been steadily declining, while the share spent on prescription drugs continues to increase [57].

Publicly funded healthcare accounts for 70% of the total health expenditure – approximately 184 billion CAD [57]. Within the public health system, provincial governments are the primary financers, constituting around 93% of total spending [56]. Provincial government insurance programs, in turn, are funded by income tax revenues and transfer payments from the federal government [54].

Alternately, private healthcare accounts for 30% of total healthcare spending [57]. Within the private sector, just under one-half of the funding comes from out-of-pocket spending, followed by approximately 40% coming from private health insurance [57]. Two-thirds of all Canadians have supplementary private health insurance in addition to universal healthcare, in order to cover for services which are

not reimbursed by the *Canada Health Act* [56]. Private insurance expenditures are increasing by the highest rate annually, though out-of-pocket spending continues to increase as well [57].

Coverage of Services

All medically necessary hospital, physician, and diagnostic services are covered under the *Canada Health Act* for every eligible resident. As previously mentioned, what constitutes medically necessary services differs according to province or territory. Public insurance plans must provide first dollar coverage for all such services – where the insurance pays for the full service up front without copays or deductibles, as long as the service is medically necessary in that province or territory [56]. For example, one of the largest public health insurance plans in Canada is the Ontario Health Insurance Plan (OHIP) – for which all Canadians who permanently reside in the province of Ontario are eligible. Some of the services fully covered by OHIP include all medically necessary doctor's visits, hospital admissions, prescription drugs given in hospitals, abortions, eligible dental surgery and optometry, as well as preventive care such as annual physical exams, screening tests, and vaccinations [60].

Most provincial plans do not cover or only partially cover services such as dental and vision care, prescription drugs prescribed outside of the hospital, nonhospital institutions, long-term care, and ambulance care. Such services may be fully covered by the government in certain population groups, and coverage may vary greatly between different provinces. For instance, OHIP fully covers prescription medications for residents below age 25 and over age 65, as well as annual eye examinations for those below age 19 and over age 65 [60]. However, a large portion of the population are not covered for these services and, as a result, either purchase additional private insurance to cover these costs or pay out of pocket. In Canada, there are no caps in place for cost-sharing and out-of-pocket spending for uninsured services [56].

Structure of Canadian Healthcare Services

The primary care setting is typically the first point of contact for most Canadians with healthcare services. In 2018 Canada had 89,911 physicians – coming out to 2.4 doctors per 1000 people [61]. Around half of these doctors are general practitioners who provide primary care, with the second half being specialists. Medical specialists are typically secondary care providers, with the greatest proportion of them (65% in 2014) working in hospitals and the remainder in private offices or clinics [56]. Hospitals in Canada can be either private or public, the predominance of which varies significantly according to the province. In provinces like Ontario, private

nonprofit hospitals are most common, while other provinces more commonly house hospitals which are publicly owned and managed by regional health authorities [56].

The number of physicians in Canada continues to grow each year at a much faster rate – double – that of the general population [61]. In 2018, 42% of physicians were female, continuing the upward trend of an increasing female physician proportion, most noticeably in certain disciplines such as family medicine [61]. Around 25% of Canadian physicians received their medical degree outside of Canada, a figure which has remained relatively stable over the past decade [61].

Most physicians work in private practices and are compensated via the fee-for-service (FFS) payment model. This is a traditional form of payment in which services such as consultations and procedures are billed individually and comprised 73% of total payments in 2018 [61]. However, the use of alternative payment plans (APPs) has been steadily increasing over the past decade, particularly among certain physician subsets such as those working in clinics or group practices [54]. Various forms of APPs include capitation, where doctors receive annual fees for each patient registered to them, salaries, and numerous combined models. In 2018, 27% of physicians were compensated by APPs, and these alternative methods of payment continue to increase in popularity, particularly among younger physicians [61]. Physician incomes in Canada are among the highest in the world with the average gross clinical payment being 281,000 CAD per family physician and 360,000 CAD per medical specialist in 2018 [61].

Performance of Canadian Healthcare: Going Forward

Albeit inclusive and universally accessible, Canada's healthcare system is not without its faults. Some of the issues currently at the forefront of concern include long wait times and poor availability of resources. Despite spending more on healthcare than most OECD (Organization for Economic Co-operation and Development) countries, Canada has one of the longest wait times for diagnostic imaging, elective procedures, and specialist appointments – ranking last out of ten countries with similar healthcare systems in the latter two categories [62]. Additionally, Canada continues to exhibit substantial deficits in availability of human and financial resources relative to other developed countries. Per 1000 people of the population, among 28 OECD countries, Canada stands 26th for number of physicians, 25th for number of psychiatric care beds, and 25th (out of 26) for number of acute care beds [62]. It also performs far below the OECD average in number of MRI and CT machines available per one million people of the population [62]. Clinical performance and quality in Canada remain variable. Canada ranks above average in certain health indicators, for example, performing well in 5-year survival rates for certain common cancers such as breast cancer. On the other hand, in other areas such as perinatal and infant mortality rates, Canada performs very poorly relative to other OECD countries [62]. Other issues most commonly cited as key concerns by Canadians include a lack of dental and prescription drug insurance coverage, as

well as inconsistent access to primary care in certain geographical areas, especially rural communities.

In spite of its downfalls, Canada's universal healthcare system continues to receive a relatively high level of public support among its citizens. The inclusivity of the system is a defining point of pride for most Canadians, and the move toward strict privatization is currently relatively opposed by the public. However, many Canadians believe that the current costly system will not survive in the future. With incoming data shedding light on its inadequacies, the Canadian government aims to shift its focus toward structuring a more cost-efficient system, one in which the amount of money Canada spends on the system is matched by the delivery of a higher quality of care to all of its citizens.

The NHS

The UK has got one of the most robust healthcare systems in the world. It consists of both public sector and private sector entities. The public sector-/government-funded health system is called the NHS – National Health Service. The private sector comprises of different clinics and hospitals which supplement the role of the NHS. On the 5th of July 1948, a historic moment occurred in British history, a culmination of a bold and pioneering plan to make healthcare no longer exclusive to those who could afford it but to make it accessible to everyone. The NHS was born. The National Health Service, abbreviated to NHS, was launched by the then Minister of Health in Attlee's postwar government, Aneurin Bevan, at the Park Hospital in Manchester. The motivation to provide a good, strong, and reliable healthcare to all was finally taking its first tentative steps.

Costs

NHS net expenditure has increased from £78.881 billion in 2006/2007 to £120.512 billion in 2016/2017. Planned expenditure for 2017/2018 is £123.817bn and for 2018/2019 is £126.269bn. In real terms the budget is expected to increase from £120.512bn in 2016/2017 to £123.202bn by 2019/2020. Health expenditure per capita in England has risen from £1879 in 2011/2012 to £2106 in 2015/2016. The NHS net deficit for the 2015/2016 financial year was £1.851 billion. The provider deficit for the 2016/2017 financial year has been confirmed at £791m. CCG investment in mental health was £9.148bn in 2015/2016 and a planned £9.500bn in 2016/2017 [63].

NHS Sites

In England alone there are 207 clinical commissioning groups, 135 acute nonspecialist trusts (including 84 foundation trusts), 17 acute specialist trusts (including 16 foundation trusts), 54 mental health trusts (including 42 foundation trusts), 35

community providers (11 NHS trusts, 6 foundation trusts, 17 social enterprises, and 1 limited company), 10 ambulance trusts (including 5 foundation trusts), 7454 GP practices, and 853 for-profit and not-for-profit independent sector organizations, providing care to NHS patients from 7331 locations [63].

Workforce

In March 2017, across Hospital and Community Healthcare Services (HCHS), the NHS employed (full-time equivalent) 106,430 doctors; 285,893 nurses and health visitors; 21,597 midwives; 132,673 scientific, therapeutic, and technical staff; 19,772 ambulance staff; 21,139 managers; and 9974 senior managers. There were 10,934 additional HCHS doctors (FTE) employed in the NHS in March 2017 compared to March 2010 (11.45 percent). In the past year, the number has increased by 2.29 percent. There were 2197 more ambulance staff in March 2017 compared to 7 years earlier (12.50 percent). In the past year, the number has increased by 7.48 percent. There were 145 fewer psychiatrists across all grades (FTE) in March 2017 than March 2010 (1.64 percent decrease). 54.06 percent of NHS employees across HCHS are professionally qualified clinical staff, as of March 2017. In March 2017, 61,934 EU staff were working across HCHS – equivalent to 5.22 percent of the headcount. This equates to 57,737 FTE, which is 5.51 percent. Between March 2010 and March 2017, the number of professionally qualified clinical staff across HCHS has risen by 5.89 percent. In March 2017 there were 33,423 full-time equivalent GPs (excluding locums), which is a reduction of 890 (2.59 percent) on March 2016. Medical school intake rose from 3749 in 1997/1998 to 6262 in 2012/2013 – a rise of 67.0 percent. 7112 graduates were accepted on to foundation programs across the UK in 2016. The pay in the NHS for doctors can range from £22,000/annum (for foundation year 1 doctors) to £75,000/annum (for newly appointed consultants) [63].

The Healthcare System of India

India with a population of 1.3 billion is the second most populous country in the world just behind China. India is a booming economy, but as per the international reports, there is still a considerable percentage of population that lives below poverty line, which causes its own problems for the healthcare system. In India there are two sectors that provide healthcare to the public: one is public sector which is government funded, and the other is private sector to which people prescribe to out of their own pockets. Despite the two sectors, most of the people use the public sector healthcare facilities as the private sector insurers fees can be out of the reach of majority of population.

As per the estimates, Indian government spends $53 billion to fund its public sector healthcare facilities which makes 1.28% of the country's GDP. Of a total of 628,708 government beds, 196,182 are in rural areas. Government hospitals operate within a yearly budget allocation.

It is estimated that there are around 850,000 doctors available for active service in India, with a doctor-population ratio of 1:1596, which is much below the WHO standards. India has recently looked into its medical workforce development and opened new medical colleges to fulfil this shortage of doctors in the country. India has as dependent on different states a structure of training for doctors in different specialities. The base of the doctors working in the public sector can vary, but there is a consensus that they are not as well-paid as the doctors working in the private sector. There is also a shortage of professional development activities. All these factors contribute to a lot of doctors leaving for Western healthcare systems like UK and the USA which contributes to a significant brain drain from India.

The Healthcare System of Pakistan

Pakistan has a population of 220 million. Majority of the population lives in the rural areas. Like India there is a considerable percentage of people that live below the poverty line and don't have easy access to healthcare facilities. Pakistan has a mixed health system that includes public, parastatal, private, civil society, philanthropic contributors, and donor agencies. In Pakistan, healthcare delivery to the consumers is systematized through four modes of preventive, promotive, curative, and rehabilitative services. The private sector attends 70% of the population through a diverse group of healthcare members (some might be medically trained but there is a proportion of providers who are not adequately trained in the field of medicine).

Pakistan spends more than 50 billion PKR each year on its healthcare system which is 0.4% of its GDP. There are 924 public hospitals, 4916 dispensaries, 5336 basic health units, and 595 rural health centers.

As per estimates there are 139,555 doctors, 9822 dentists, and 69,313 nurses in Pakistan. This shows that there is a considerable shortage of trained healthcare staff to provide safe care to the patients in this region of the world. Pays for government-appointed healthcare staff have risen recently but are still considered to be one of the lowest in the region. There is somewhat a structured training process in place in Pakistan through college of physicians and surgeons of Pakistan. Keeping in mind other factors, there has been a brain drain of doctors from Pakistan to Western healthcare systems in search of better careers and professional development.

Healthcare Systems in Continental Europe

The European Union

Twenty-seven countries are members of the European Union. Liechtenstein, Norway, and Iceland are outside of the European Union but members of the European Economic Area. The UK has withdrawn from the European Union in 2020 following a referendum in 2016. Every country in the European Union and

European Economic Area has a unique healthcare system. What they all have in common is that regardless of the way they are funded, the healthcare is provided to all individuals. The European Health Insurance Card (EHIC) ensures citizens of one EU member state are able to get necessary healthcare in any other member state.

The German Healthcare System

Germany has a multi-payer universal healthcare system. Health insurance is mandatory for all citizens and permanent residents of Germany [3]. There are two systems providing health insurance in Germany. One of them is the competing, not-for-profit, nongovernmental health insurance funds ("sickness funds") in the statutory health insurance, and the other is the private health insurance. Most of the major academic hospitals are owned by the government. The government, however, has very little role in financing of healthcare [3]. The contributions to the sickness funds are mandatory and deducted as a percentage of gross wages up to a certain amount [3]. All employed individuals earning less than a threshold are mandatorily covered through sickness funds. Those who earn above the threshold can choose to remain covered by sickness funds or purchase private health insurance. Overall, 86% of the population is covered through sickness funds [3]. Those who opt out of the sickness funds and civil servants are covered by private health insurance. The insurance companies are regulated by the government to ensure that large premium increases for those insured do not occur. Inpatient and outpatient visits, mental healthcare, dental care, optometry, physical therapy, prescription drugs, medical aids, rehabilitation, and hospice and palliative care are covered [3]. It also covers sick leave compensation [3]. The copayments for the most part do not exceed 10 euros [3]. The sickness funds also cover obstetric care, although some private insurers do not. Emergency contraception is easily obtainable [3].

While most of the hospitals are owned by the government, most of the ambulatory physicians work in private practices. They are generally members of regional associations that negotiate contracts with sickness funds. Patients are free to choose their own primary care physicians, specialists, and hospitals. Family doctors have no formal gatekeeping function. The regional physician associations also ensure access to after-hours care for those in need. About half of all the hospitals are public, a third is private not-for-profit, and the rest are for-profit private hospitals [3]. Despite such system, the average per capita out-of-pocket spending in Germany was only $664 [3]. Life expectancy in Germany is 81 and the infant mortality rate is 3.22/1000 live births [9, 10].

The French Healthcare System

The French healthcare system is widely considered to be among the best in the world, and many consider it to be the best model for countries to follow. It is universal and for the most part funded through taxes, although private health insurance

exists. The statutory health insurance (SHI) provides universal and compulsory coverage [3]. Very few individuals can opt out of SHI, usually those employed by foreign companies [3]. The government covers more than three-quarters of healthcare costs in France [3]. Most of the private health insurance in France is complementary, covering copayments for usual care, vision and dental care. Most of the voluntary health insurance is provided by not-for-profit, employment-based associations, which are allowed to cover only copayments for the services provided by the statutory health insurance [3]. The services which are covered through the SHI are defined by the government and do not vary based on the region [3]. Outpatient and inpatient care, including any rehabilitation services, are covered by the SHI [3]. Most appliances and prescription drugs are covered as well [3]. The hospice and mental healthcare are partially covered [3]. Most out-of-pocket spending is for dental and vision care, although the fees are generally minimal [3]. In fact, the average out-of-pocket healthcare spending in France is 305 USD per person per year [3].

The gatekeeping system at the level of the primary care is voluntary, and financial incentives are provided to those who choose to register with a primary care physician [3]. Physicians are also given financial incentives to work in areas lacking medical workforce [3]. Many of the physicians are paid on a fee-for-service basis [3]. The rest are either fully or partially salaried. For the most part, patients are free to choose the specialist once they are referred [3]. The after-hours care is generally accessed through emergency departments of public hospitals or private hospitals that have signed agreements with their Regional Health Agencies [3]. About two-thirds of all the hospitals are public institutions with the rest being a mix of private for-profit and private not-for-profit institutions [3]. Gynecologists can be freely chosen and referrals are not necessary. Contraception is readily available and most of the cost is usually reimbursed. Life expectancy in France is 83 and the infant mortality rate is 3.12/1000 live births [9, 10].

The Italian Healthcare System

The Italian healthcare system is a regionally based National Health Service (NHS), which provides universal coverage to all legal residents, mostly free of charge [3]. It is largely funded through taxes, which get distributed to the regional governments [3]. In addition to that, the individual regions are allowed to generate additional revenue [3]. There are no provisions for people to opt out of the system [3]. Therefore, while supplemental and complementary insurance do exist, substitutive private insurance does not. Some minor copays do exist [3]. The role of private healthcare is limited and it accounts for approximately 1% of all healthcare costs [3]. Some of the things that may be covered by private insurance include higher standard of comfort and privacy during hospital stays, some copays may be covered, and patients may be compensated during their stay at the hospital. The total out-of-pocket expenditure per capita is around $700 per year [3]. Most primary care

physicians, including pediatricians, are self-employed or independent and are paid a capitation fee based on the number of patients they care for [3]. Overall, the earnings of primary care physicians in Italy are reasonable at around 100,000 euros per year before tax. Patients are required to register with a primary care physician who also serves as a gatekeeper [3]. Physicians are incentivized to limit prescribing and referrals only to medically necessary cases [3]. Local health units also often provide outpatient specialist services [3]. Once referred, patients can usually choose the hospital but not necessarily the individual specialist they see [3]. After-hours care is generally provided by the emergency medical service [3]. There is a significant number of private accredited hospitals [3]. Mental healthcare is fully covered and so are many of the rehabilitation facilities [3]. Long-term care is generally considered to be worse than in most other wealthy European countries [3]. Obstetric and gynecological care is readily available and so is contraception, including emergency contraception. Life expectancy in Italy is 83 and infant mortality is 2.7/1000 live births [9, 10].

The Swedish Healthcare System

The Swedish healthcare system is highly regarded worldwide. Healthcare in Sweden is organized on three levels: national, regional, and local [3]. The system is universal and all residents have access to it. Employers and employees contribute into the public fund [3]. Small copays are associated with many of the services, usually the equivalent of 20–40 USD [3]. Nationally, the annual out-of-pocket costs are capped [3]. Private insurance, in form of supplementary coverage, accounts for less than 1% of healthcare spending in Sweden [3]. All the services are covered by the public system and there is no pre-set list of defined benefits [3]. Dental care, vision care, long-term care, patient transport services, and hospice care are all covered [3]. There is no formal gatekeeping function of the primary care physicians [3]. Traditionally, long waiting lists have been a cause of dissatisfaction among the Swedish population so a new set of rules was released guaranteeing that specialist care must be accessible within 90 days and any surgeries must be carried out within 90 days from when it is determined that they are medically indicated. Urgent care is easily accessible at the time of the need [3]. Multiple primary care providers generally work together in larger practices [3]. Most patients register with a practice, rather than with an individual physician. Primary care providers also provide after-hours care [3]. Most physicians in Sweden earn around 6000 euros a month. Outpatient specialist services are offered at hospitals and private clinics. The majority of hospitals are public, with only a few private hospitals in the country [3]. Gynecologists generally work as primary care physicians and women's health services are easily accessible. Birth control is readily available. The life expectancy in Sweden is 82 and the infant mortality rate is 2.2/1000 live births [9, 10].

Healthcare Systems in Latin America

The Latin American Healthcare Systems

Although many still consider Latin America, consisting of Central and Southern America, to be a part of the developing world, a number of countries in the region report life expectancies comparable to many countries in the west. Moreover, Latin American healthcare systems are frequently discussed in the US politics, both in terms of the positives and the negatives. The universal systems of socialist countries like Cuba and Venezuela have frequently been used as examples of the disaster that might happen to the American public if the USA were to ever adopt a universal healthcare system. The proponents of switching to a universal system in the USA, on the other hand, tend to argue that they want the USA to be more like western and northern Europe. Meanwhile, some prominent personalities in the USA, such as the filmmaker Michael Moore, have spoken very highly and even recorded documentaries praising the Cuban healthcare system. In this chapter we are going to take a closer look at a number of countries in the region and analyze their healthcare systems.

The Mexican Healthcare System

It makes sense that Mexico is the first country that we are going to look at as it is not only one of the largest Latin American countries but it also shares a land border with the USA meaning that a number of people frequently travel between the countries. Mexico has achieved universal healthcare coverage through the public healthcare system that all employees contribute to. The Mexican constitution guarantees healthcare to all citizens. Those who are unemployed, such as many of the expats, are able to pay for access to the system. While the quality of healthcare in the public system is generally adequate, there is also a private healthcare system. The service is also inconsistent between different parts of Mexico. There is a separate system in Mexico for those with chronic conditions or those unable to pay, called "Seguro Popular." Only around 6% of GDP is spent on healthcare. The costs for any medical services are overall usually less than half of those in the USA. The same applies to most drugs. Overall, the system is far cheaper than that of the USA. Despite that, out-of-pocket expenditures are still significant compared to the total costs of healthcare. Both government-run and private hospitals operate in Mexico [64, 65]. Life expectancy in Mexico is 76 and the infant mortality rate is 12 per 1000 live births [9, 10].

The Panamanian Healthcare System

The Panamanian healthcare system is generally considered to be very affordable. There are three healthcare systems in Panama, two of which are run by the government. They are public hospitals run by the Ministry of Health, social security

hospitals, and the private system. The same physicians work in both government-run and private hospitals. Outside of the Panama City, obtaining good-quality healthcare can be difficult. While the government provides health insurance to citizens and permanent residents, those who can afford it generally prefer to purchase additional private insurance. Most drugs are much cheaper than in the USA and can be purchased without a prescription. Many of the physicians who serve the Panamanian hospitals have trained abroad, often in the USA, and private hospitals are often affiliated with major institutions in the USA. While people from the west may consider the costs of healthcare in Panama to be low, it should be kept in mind that the average wages in Panama are quite low. Healthcare tourism is popular due to lower costs, availability of US-trained medical workforce, and the availability of spas and rehabilitation facilities [66, 67]. Life expectancy in Panama is 79 and the infant mortality rate is 10 per 1000 live births [9, 10].

The Cuban Healthcare System

As previously mentioned, the Cuban healthcare system is praised by many who believe that for a relatively poor country, Cuba is able to provide excellent healthcare to all its citizens. The fact that the life expectancy in Cuba is around 79 and the infant mortality rate is 4 adds value to those claims [9, 10]. The origins of the Cuban healthcare system date back to the socialist revolution of 1959. To reduce overall healthcare spending, Cuba has focused heavily on disease prevention and primary care. The doctor-to-patient ratio in Cuba also surpasses that of many highly developed countries. The salaries of doctors in Cuba are low, well below 100 USD per month, and many report that the infrastructure is crumbling. The government spends between 300 and 400 USD per person each year on healthcare but gains billions from its overseas medical missions. As Cuban doctors spend a lot of time participating in medical missions in developing countries, many argue that their lack of exposure to medicine in the developed countries may be impairing the modernization of their hospitals. The problem is not just the infrastructure and lack of international influence. Many essential medicines and pieces of equipment are in extremely short supply. Foreigners or Cubans living abroad are required to purchase health insurance with the option to do so upon arrival [68, 69].

The Brazilian Healthcare System

Healthcare in Brazil is a constitutionally guaranteed right, provided by both government-run and private institutions. All legal residents, including foreigners, can obtain free healthcare at government-run clinics and hospitals. All the medical services, including prescription drugs, are provided free of charge through the public healthcare system. Approximately 20–30% of the population use private health

insurance since private hospitals tend to be better and the wait times are generally shorter. The quality of healthcare in rural areas may also be lacking in quality and quantity as most of the services and hospitals are located in cities. The overall costs of healthcare, even private, are significantly lower than in the USA. A family of four can purchase private health insurance for under 300 USD. Even those with private health insurance can still access the public healthcare system if they wish. Overall, it is believed that the quality of healthcare in Brazil is good and there are many state-of-the-art medical facilities available. Brazil spends around 8% of its GDP on healthcare [70]. Life expectancy in Brazil is 74 and the infant mortality rate is around 18 per 1000 live births [9, 10].

The Argentinian Healthcare System

The Argentinian healthcare system is divided into public, private, and social security systems. The public system is funded through regular contributions from employees and employers. The minimum level of coverage is guaranteed to all and people with preexisting conditions are covered. It is generally thought that the quality of healthcare in Argentina is good. Most of the medical services are free of charge and only some medications and chronic conditions require copays. The waiting lists can be long, especially for nonurgent and elective procedures. Around 10% of the wealthiest residents in Argentina also have private health insurance for additional benefits. The Argentinian private health insurance system is among the best in Latin America. The standards in larger metropolitan areas, such as Buenos Aires, are generally far higher than in more rural parts of the country. Basic private plans cost as little as 50 USD per month. Many of the physicians in Argentina have trained overseas, in Western countries. Buenos Aires also has British, German, Swiss, and Italian hospitals. In general, healthcare costs are often as little as 30% of those one would pay for the same services in the USA [71]. The life expectancy in Argentina is 77 and the infant mortality rate is around 10 per 1000 live births [9, 10].

The Colombian Healthcare System

The World Health Organization rated the Colombian healthcare system better than those of the USA and Canada. Colombia is also home to up to 40% of the best hospitals in Latin America. There are one public and a number of private health insurance plans. Public healthcare is available to residents who pay a monthly premium of around 12.5% of their gross earnings. Very poor and homeless people are covered by a separate free government-subsidized system. Those who can afford it are also able to purchase private insurance in addition to the public plan. People older than

60 are generally unable to enrol in private plans. Some of the perks of private health insurance plans are the ability to choose one's own physicians, the ability to see specialists without being previously referred to them, private hospital rooms, and some other comfort-enhancing benefits. The copayments in the public system are low for US standards. Even those who choose to pay out of pocket usually pay only around 50 USD for specialist consultations. Many medications in Colombia do not require prescriptions. Medical tourism to Colombia is becoming increasingly popular among the US adults, even for dental works which can be thousands of dollars cheaper than in the USA [72]. Life expectancy in Colombia is 76 and the infant mortality rate is around 14 per 1000 live births [9, 10].

The Venezuelan Healthcare System

Little can be said about Venezuela without triggering a political debate in the USA as the opinions on the desired US approach to its relationship with Venezuela could not be further apart. As a socialist country, Venezuela on paper guarantees healthcare to all citizens. Once upon a time, Venezuela was thought as a country with an excellent healthcare system, especially when compared to the neighboring countries. Today, many reports point to the system collapsing and people being unable to access healthcare when in need. Medicines, surgical equipment, and even the electricity are reported to be in short supply in many hospitals nationwide. The infectious diseases, including malaria, have been on the rise. Further increases in international, mainly American sanctions are likely to lead to further deterioration of the quality of healthcare in Venezuela [73, 74]. Life expectancy is 76 and the infant mortality rate is around 12 per 1000 live births [9, 10]. If the reports of crumbling infrastructure, poor sanitation, and lack of basic supplies are correct, those numbers are likely to deteriorate in the future.

Healthcare Systems of Japan, South Korea, Singapore, the United Arab Emirates, Australia, and New Zealand

Wealthy Nations Outside of North America and Europe

No analysis of global healthcare systems would be complete without looking at the systems in some of the richest countries in the world outside of North America and Europe. They are generally located in Asia and Oceania. All of these countries have high standards of living, long life expectancies, and low infant mortality rates. Their healthcare systems differ significantly as do their political and economic systems.

Healthcare in Japan

Japan is widely considered to be one of the most developed countries in the world, famous for some of the greatest technological advancements of the modern times. Japan is also the country with the highest life expectancy in the world (except Monaco) and the largest number of people who have lived for more than 110 years [3, 9]. Hospitals and clinics in Japan are equipped with state-of-the-art equipment and highly knowledgeable workforce. Japanese scientists are among the most respected worldwide. Generally speaking, healthcare in Japan is provided free of charge for citizens and foreigners [3]. Health insurance contributions are deducted from salaries automatically based on income. The patients generally pay 30% of the healthcare costs [3]. Private insurance is supplementary. There are monthly out-of-pocket maximums to prevent people from going bankrupt over healthcare bills [3]. The salaries of physicians in Japan are lower than in the USA and comparable to those in Western European countries. A potential problem for the Japanese healthcare system is the relative shortage of physicians when compared to most of the Western countries [31].

Healthcare in South Korea

Just like Japan, South Korea also has a healthy and long-living population despite spending only 8% of its GDP on healthcare [75, 76]. The healthcare system is universal and accessible to both citizens and foreigners who have lived in the country for more than 6 months [75]. Over the past 30 years, it has grown from a relatively poor and understaffed service to a highly advanced system that provides excellent care to the population. It is funded through a combination of subsidies by the government, external contributions, and, interestingly, tobacco surcharges [75]. The individual contributions are dependent on the earnings and people who earn more also contribute more to the system. Overall, the quality of healthcare is excellent although there are significant differences between urban and rural areas of the country and wait times can be lengthy [75]. Private facilities exist and are mostly found in urban areas. Some medications and procedures associated with chronic conditions, such as cancers, are often not covered and can be expensive [75]. Overall, patients pay around 20% of their healthcare costs out of pocket [75]. The exact amounts people pay are still significantly lower than in the USA and many other Western countries. Private insurance usually covers the copays and any medications or treatments not covered through the public system [75].

Healthcare in Singapore

The city-state of Singapore, known for extreme cleanliness, harsh legal ramifications for anyone breaking the law, and some of the most advanced technology in the world, also has an excellent healthcare system and long life expectancy. Oftentimes,

US politicians have used Singaporean system as the healthcare model that could be followed in the USA. It offers universal healthcare coverage to all citizens through a combination of government subsidies, which come mainly from tax revenue and private individual savings [3]. Everything is administered at the national level. The government pays for 80% of the total cost of care in public hospitals and clinics [3]. On top of that, there is a mandatory medical savings program to which individuals contribute a percentage of their salary. All the contributions and withdrawals are tax-exempt [3]. There is also an additional low-cost catastrophic insurance plan that covers major or prolonged illnesses that would be too expensive to be covered from the medical savings account [3]. There are also a number of options for purchasing private health insurance. The government has set up a separate safety net for the poor which helps them cover 100% of the healthcare costs [3]. The primary care is generally administered by private providers in a network of general practitioners [3]. There are numerous hospitals that offer specialist services and after-hours care [3]. Most of the hospitals are public and divided into groups based on the scope of care they provide [3]. It should be noted that the healthcare spending per capita in Singapore is significant but physicians themselves earn high salaries [3].

Healthcare in the United Arab Emirates

The United Arab Emirates (UAE) is a country that has seen significant development over the last few decades and is now one of the wealthiest countries in the world. It is also considered one of the most efficient healthcare systems in the world. It is also known for medical tourism. Both public and private facilities exist [77]. The public system is funded through taxes. For UAE nationals, accessing healthcare through public hospitals is inexpensive [77]. Expats are generally required to pay for any medical treatments [77]. There are many new state-of-the-art medical facilities and at the moment, private facilities outnumber the public ones. There are differences between the individual emirates as residents of Dubai and Abu Dhabi are required to purchase health insurance, while residents of some other emirates are not [77]. English is commonly spoken and most of the medical staff is foreign-trained [77]. Finding a doctor is easy and usually done online. Being married is a requirement to give birth [77]. Overall, the costs of healthcare in the UAE are high in part because of the widespread private healthcare system and the tendency of residents to seek specialist treatment without using general practitioners as gatekeepers [77]. Many pharmacies are open 24 hours a day [77]. Some report that mental healthcare is a weaker spot of the system and that there may be some stigma associated with mental illnesses [77]. Interestingly, the total healthcare expenditure was only 3.4% of the GDP in 2018 [78].

Healthcare in Australia

The Australian healthcare system is also widely seen as one of the most successful in the world as Australians enjoy some of the best life expectancy and quality of life in the world. It is also one of the most comprehensive healthcare systems around the

world. There are two major components of the system: the public and the private system [3]. The public system consists of public hospitals, community-based facilities, and affiliated organizations [3]. It is accessible for free or at low cost through a tax-funded insurance program, Medicare [3]. The private system consists of private hospitals, specialist health, and pharmacies [3]. There are a number of ways people pay for care through the private system, including out-of-pocket payments and additional private insurance. Most of the time, general practitioners serve as gatekeepers [3]. Emergency care is generally provided at public hospitals [3]. Those who choose to undergo nonurgent treatment at public hospitals tend to face longer wait times compared to those who get the same services through the private system. Such system can sometimes become expensive for patients who require many specialist visits. Around half the Australian population has private health insurance in addition to Medicare. Out-of-pocket costs on medications are capped [3]. Out-of-hours care is also easily accessible. The total health expenditure is around 10% of the Australian GDP [3].

Healthcare in New Zealand

There is no question that the healthcare system in New Zealand also provides the population with high-quality healthcare. It is also a mix of a public and private system that compliments each other. All permanent residents have access to a range of public health services that are funded through taxes [3]. Nonresidents pay the full price of all services in the public sector [3]. Private insurance is offered by a number of different insurers. It is usually used to cover the services where the patient would be required to pay some of the cost [3]. It can also be used to gain faster access to nonurgent treatments. Most of the standard medical needs of the population are covered through the public system, including inpatient and outpatient management, prescription drugs, preventive services, mental healthcare, dental care for children, long-term care, hospice care, and disability support services [3]. General practitioner visits generally require copays [3]. There are multiple safety nets available to those who cannot afford the copays. General practitioners act as gatekeepers to specialist services [3]. They also organize after-hours care. Since the after-hours GP care can be more expensive than regular GP care, many patients choose to forego it and seek help in emergency departments [3]. Most of the hospitals are public, although private hospitals exist. The total healthcare spending in New Zealand is under 10% of its GDP with close to 80% of it going to the public sector [3].

The Electronic Medical Records

The term “electronic medical records” (EMRs) refers to digital versions of patient charts. Considering the vast amounts of data reported in each patient chart, there is no doubt that the use of computer databases simplifies the process of searching for

the necessary information, makes it easier to do any required calculations, and facilitates communication between healthcare providers. They may also decrease many of the administrative costs. Potential issues include the risks of electronic failures and data breaches. EMRs are increasingly used in the Western health systems, such as those of the USA and Europe. In the USA, most hospitals have adopted some form of EMR, although the lack of system centralization and the existence of healthcare networks makes it more challenging to set up a functional EMR system compared to countries with single-payer healthcare systems [79–82].

References

1. World Bank Country and Lending Groups – World Bank Data Help Desk [Internet]. [cited 2020 May 26]. Available from: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519
2. De Lew N, Greenberg G, Kinchen K. A layman's guide to the U.S. health care system. Health Care Financ Rev. 1992;14(1):151–69.
3. Mossialos E, Djordjevic A, Osborn R, Sarnak D, editors. International profiles of health care systems. New York: The Commonwealth Fund; 2017.
4. What's Medicare?|Medicare [Internet]. [cited 2020 May 27]. Available from: https://www.medicare.gov/what-medicare-covers/your-medicare-coverage-choices/whats-medicare
5. Military.com. VA Health Care: Cost and Co-payments [Internet]. Military.com. [cited 2020 May 30]. Available from: https://www.military.com/benefits/veterans-health-care/va-health-care-cost-and-copayments.html
6. PatientEngagementHIT. VA Sees Improvements in Patient Satisfaction, Care Access [Internet]. PatientEngagementHIT. 2019 [cited 2020 May 30]. Available from: https://patientengagementhit.com/news/va-sees-improvements-in-patient-satisfaction-care-access
7. Where 2020 Democrats stand on Medicare-for-all and other health-care issues [Internet]. Washington Post. [cited 2020 May 30]. Available from: https://www.washingtonpost.com/graphics/politics/policy-2020/medicare-for-all/
8. Trump Is Trying Hard To Thwart Obamacare. How's That Going? [Internet]. NPR.org. [cited 2020 May 30]. Available from: https://www.npr.org/sections/health-shots/2019/10/14/768731628/trump-is-trying-hard-to-thwart-obamacare-hows-that-going
9. The World Factbook — Central Intelligence Agency [Internet]. [cited 2020 May 30]. Available from: https://www.cia.gov/library/publications/the-world-factbook/rankorder/2102rank.html
10. The World Factbook — Central Intelligence Agency [Internet]. [cited 2020 May 30]. Available from: https://www.cia.gov/library/publications/the-world-factbook/rankorder/2091rank.html
11. How does the quality of the U.S. healthcare system compare to other countries? [Internet]. Peterson-KFF Health System Tracker. [cited 2020 May 30]. Available from: https://www.healthsystemtracker.org/chart-collection/quality-u-s-healthcare-system-compare-countries/
12. Hartman M, Martin AB, Benson J, Catlin A. The National Health Expenditure Accounts Team. National Health Care Spending in 2018: growth driven by accelerations in Medicare and private insurance spending: US health care spending increased 4.6 percent to reach $3.6 trillion in 2018, a faster growth rate than that of 4.2 percent in 2017 but the same rate as in 2016. Health Affairs. 2020;39(1):8–17.
13. US healthcare spending to hit $6.2 trillion by 2028; growth set to outpace GDP|S&P Global Market Intelligence [Internet]. [cited 2020 May 31]. Available from: https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/us-healthcare-spending-to-hit-6-2-trillion-by-2028-growth-set-to-outpace-gdp-57739003
14. Cylus J, Hartman M, Washington B, Andrews K, Catlin A. Pronounced gender and age differences are evident in personal health care spending per person. Health Affairs. 2011;30(1):153–60. https://doi.org/10.1377/hlthaff.2010.0216.

15. Health Care Expenditures per Capita by State of Residence [Internet]. KFF. 2017 [cited 2020 May 31]. Available from: https://www.kff.org/other/state-indicator/health-spending-per-capita/
16. Current health expenditure (% of GDP)|Data [Internet]. [cited 2020 May 31]. Available from: https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS
17. Hankin A. How U.S. Healthcare Costs Compare to Other Countries [Internet]. Investopedia. [cited 2020 May 31]. Available from: https://www.investopedia.com/articles/personal-finance/072116/us-healthcare-costs-compared-other-countries.asp1.
18. Do Medical Bills Really Bankrupt America's Families? [Internet]. The Balance. [cited 2020 May 31]. Available from: https://www.thebalance.com/medical-bankruptcy-statistics-4154729
19. 41% of Americans would be able to cover $1,000 emergency with savings [Internet]. [cited 2020 May 31]. Available from: https://www.cnbc.com/2020/01/21/41-percent-of-americans-would-be-able-to-cover-1000-dollar-emergency-with-savings.html
20. Health Insurance Costs, Premiums, Deductibles, Co-Pays & Co-Insurance [Internet]. Debt.org. [cited 2020 May 31]. Available from: https://www.debt.org/medical/health-insurance-premiums/
21. How Much Does Individual Health Insurance Cost? – eHealth Insurance [Internet]. [cited 2020 May 31]. Available from: https://www.ehealthinsurance.com/resources/individual-and-family/how-much-does-individual-health-insurance-cost
22. Too many choices, high costs and bureaucracy: British expats grade American healthcare system "a pain in the arse" [Internet]. the Guardian. 2015 [cited 2020 May 31]. Available from: http://www.theguardian.com/money/2015/jan/12/us-healthcare-system-leaves-brits-baffled-enraged
23. NHE Fact Sheet|CMS [Internet]. [cited 2020 May 31]. Available from: https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NHE-Fact-Sheet
24. 6 Reasons Healthcare Is So Expensive in the U.S. [Internet]. Investopedia. [cited 2020 May 31]. Available from: https://www.investopedia.com/articles/personal-finance/080615/6-reasons-healthcare-so-expensive-us.asp
25. Katz J, Quealy K, Sanger-Katz M. Would 'Medicare for All' Save Billions or Cost Billions? The New York Times [Internet]. 2019 Apr 10 [cited 2020 May 31]; Available from: https://www.nytimes.com/interactive/2019/04/10/upshot/medicare-for-all-bernie-sanders-cost-estimates.html
26. Active Physicians with a U.S. Doctor of Medicine (U.S. MD) Degree by Specialty, 2015 [Internet]. AAMC. [cited 2020 May 31]. Available from: https://www.aamc.org/data-reports/workforce/interactive-data/active-physicians-us-doctor-medicine-us-md-degree-specialty-20151.
27. Number of actively licensed physicians increased 12% since 2010 [Internet]. Healthcare Dive. [cited 2020 Jun 2]. Available from: https://www.healthcaredive.com/news/number-of-actively-licensed-physicians-increased-12-since-2010/447700/
28. AACN Fact Sheet – Nursing [Internet]. [cited 2020 Jun 2]. Available from: https://www.aacnnursing.org/News-Information/Fact-Sheets/Nursing-Fact-Sheet
29. Research Shows Shortage of More than 100,000 Doctors by 2030 [Internet]. AAMC. [cited 2020 Jun 2]. Available from: https://www.aamc.org/news-insights/research-shows-shortage-more-100000-doctors-2030
30. The US can't keep up with demand for health care workers [Internet]. [cited 2020 Jun 2]. Available from: https://money.cnn.com/2018/05/04/news/economy/health-care-workers-shortage/index.html
31. Physicians (per 1,000 people)|Data [Internet]. [cited 2020 Jun 2]. Available from: https://data.worldbank.org/indicator/SH.MED.PHYS.ZS
32. New report reveals alarming shortage of country doctors [Internet]. the Guardian. 2019 [cited 2020 Jun 2]. Available from: http://www.theguardian.com/society/2019/oct/13/nhs-consultant-shortage-rural-coastal-areas
33. NHS staff shortage: How many doctors and nurses come from abroad? – BBC News [Internet]. [cited 2020 Jun 2]. Available from: https://www.bbc.com/news/world-48205445

34. EU may need rules to stop doctors emigrating – German minister – Reuters [Internet]. [cited 2020 Jun 2]. Available from: https://uk.reuters.com/article/uk-eu-migration-germany-idUKKCN1P70GV
35. Romania's brain drain: Half of Romania's doctors left the country between 2009 and 2015|Romania Insider [Internet]. [cited 2020 Jun 2]. Available from: https://www.romania-insider.com/romanias-brain-drain-half-of-romanias-doctors-left-the-country-between-2009-and-2015
36. Janick AJ. IMGs Continue to Show Gains in 2019 Match [Internet]. ECFMG News. 2019 [cited 2020 Jun 2]. Available from: https://www.ecfmg.org/news/2019/03/15/imgs-continue-to-show-gains-in-2019-match/
37. Resources: Data – ECFMG J-1 Visa Sponsorship [Internet]. ECFMG. [cited 2020 Jun 2]. Available from: https://www.ecfmg.org/resources/data-sponsorship.html
38. U.S. medical school enrollment rises 30% [Internet]. AAMC. [cited 2020 Jun 2]. Available from: https://www.aamc.org/news-insights/us-medical-school-enrollment-rises-30
39. Medscape Residents Salary & Debt Report 2018 [Internet]. Medscape. [cited 2020 Jun 2]. Available from: //www.medscape.com/slideshow/2018-residents-salary-debt-report-6010044
40. Medscape Residents Salary & Debt Report 2018 [Internet]. Medscape. [cited 2020 Jun 2]. Available from: //www.medscape.com/slideshow/2018-residents-salary-debt-report-6010044
41. Llewellyn A. Resident Doctors Salary Australia: Pay Rates & Titles Explained. [Internet]. https://advancemed.com.au/. [cited 2020 Jun 2]. Available from: https://advancemed.com.au/blog/resident-doctor-pay/
42. Medicine salary: What medical professions earn [Internet]. [cited 2020 Jun 2]. Available from: https://www.academics.com/guide/medicine-salary-germany
43. Scavone F. Pay scales for junior doctors in England [Internet]. The British Medical Association is the trade union and professional body for doctors in the UK. [cited 2020 Jun 2]. Available from: https://www.bma.org.uk/pay-and-contracts/pay/junior-doctors-pay-scales/pay-scales-for-junior-doctors-in-england
44. Doctors' salaries exceed expectations [Internet]. SWI swissinfo.ch. [cited 2020 Jun 2]. Available from: https://www.swissinfo.ch/eng/society/healthy-income-_doctors%2D%2Dsalaries-exceed-expectations/44505806
45. Medscape Physician Compensation Report 2019 [Internet]. [cited 2020 Jun 2]. Available from: https://www.medscape.com/slideshow/2019-compensation-overview-6011286#2
46. Scavone F. Pay scales for consultants in England [Internet]. The British Medical Association is the trade union and professional body for doctors in the UK. [cited 2020 Jun 2]. Available from: https://www.bma.org.uk/pay-and-contracts/pay/consultants-pay-scales/pay-scales-for-consultants-in-england
47. Surgeon and Doctor Salary in Australia [Internet]. HealthStaff Recruitment. [cited 2020 Jun 2]. Available from: https://www.healthstaffrecruitment.com.au/news/doctor-salaries-in-australia-what-should-i-expect/
48. People TCFT. Nurse Salaries: Which US States Pay RNs the Best (2019 Updated) [Internet]. Nightingale College. 2019 [cited 2020 Jun 2]. Available from: https://nightingale.edu/blog/nurse-salary-by-state/
49. Adult nurse job profile|Prospects.ac.uk [Internet]. [cited 2020 Jun 2]. Available from: https://www.prospects.ac.uk/job-profiles/adult-nurse
50. Average UK salary by profession: check if you earn more or less than your colleagues [Internet]. [cited 2020 Jun 2]. Available from: https://www.telegraph.co.uk/money/special-reports/average-uk-salary-profession-check-earn-less-colleagues/
51. Nurse Salary – What do nurses earn? – HealthTimes [Internet]. [cited 2020 Jun 2]. Available from: https://healthtimes.com.au/hub/nursing-careers/6/guidance/nc1/what-do-nurses-earn/605/
52. Are you one of the "everyday Australians" politicians refer to? – ABC News [Internet]. [cited 2020 Jun 2]. Available from: https://www.abc.net.au/news/2019-12-30/are-you-one-of-the-average-australians-politicians-refer-to/11831700
53. Working conditions and salary of a nurse in Germany [Internet]. Morkel Pflegevermittlung. [cited 2020 Jun 3]. Available from: https://morkel-medpersonal.com/en/working-conditions-and-salary/

54. Canada's Health Care System [Internet]. Canada.ca. [cited 30 May 2020]. Available from: https://www.canada.ca/en/health-canada/services/health-care-system/reports-publications/health-care-system/canada.html#a1
55. Milestones: universal policies [Internet]. Cpha.ca. 2020 [cited 30 May 2020]. Available from: https://www.cpha.ca/milestones-universal-policies
56. Allin S, Rudoler D. Canada: International Health Care System Profiles [Internet]. International. commonwealthfund.org. [cited 30 May 2020]. Available from: https://international.commonwealthfund.org/countries/canada/
57. Canadian Institute for Health Information. National Health Expenditure Trends, 1975 to 2019 [Internet]. 2020. Available from: https://www.cihi.ca/en/national-health-expenditure-trends-1975-to-2019
58. How Much Does Canada Spend on Health Care? [Internet]. Effective Public Healthcare Panacea Project. 2020 [cited 30 May 2020]. Available from: https://www.ephpp.ca/healthcare-funding-policy-in-canada/
59. Canadian Institute for Health Information. Age-Adjusted Public Spending per Person [Internet]. 2017. Available from: https://yourhealthsystem.cihi.ca/hsp/inbrief?lang=en#!/indicators/014/age-adjusted-public-spending-per-person/;mapC1;mapLevel2;/
60. What OHIP Covers [Internet]. Ontario.ca. 2020 [cited 30 May 2020]. Available from: https://www.ontario.ca/page/what-ohip-covers
61. Canadian Institute for Health Information. Physicians in Canada, 2018 [Internet]. 2020. Available from: https://www.cihi.ca/en/physicians-in-canada
62. Barua B, Jacques D. Comparing performance of universal healthcare countries, 2018 [Internet]. Fraser Institute: Vancouver; 2018. Available from: https://www.fraserinstitute.org/studies/comparing-performance-of-universal-health-care-countries-2018?utm_source=Media-Releases&utm_campaign=Comparing-Performance-of-Universal-Health-Care-Countries-2018&utm_medium=Media&utm_content=Learn_More&utm_term=700
63. NHS statistics, facts and figures – NHS Confederation [Internet]. [cited 2020 May 31]. Available from: https://www.nhsconfed.org/resources/key-statistics-on-the-nhs
64. Healthcare in Mexico – International Living Countries [Internet]. International Living. [cited 2020 Jun 3]. Available from: https://internationalliving.com/countries/mexico/health-care/
65. HealthManagement.org. Radiology Management, ICU Management, Healthcare IT, Cardiology Management, Executive Management [Internet]. HealthManagement. [cited 2020 Jun 3]. Available from: https://healthmanagement.org/c/icu/issuearticle/the-mexican-healthcare-system
66. About the Panama Health Care System – 3 Parts [Internet]. Living In Panama – Advice & Information. 2013 [cited 2020 Jun 3]. Available from: http://livinginpanama.com/living-in-panama/health-care-system/
67. Panama improves access to health care system [Internet]. Oxford Business Group. 2015 [cited 2020 Jun 3]. Available from: https://oxfordbusinessgroup.com/overview/towards-universal-coverage-improving-access-further-integration-health-care-system
68. Campion EW, Morrissey S. A different model — medical care in Cuba. N Engl J Med. 2013;368(4):297–9.
69. Warner R. Is the Cuban healthcare system really as great as people claim? [Internet]. The Conversation. [cited 2020 Jun 3]. Available from: http://theconversation.com/is-the-cuban-healthcare-system-really-as-great-as-people-claim-69526
70. Massuda A, Hone T, Leles FAG, de Castro MC, Atun R. The Brazilian health system at crossroads: progress, crisis and resilience. BMJ Glob Health. 2018;3(4):e000829. https://doi.org/10.1136/bmjgh-2018-000829.
71. Healthcare in Argentina: Public & Private Hospital Information [Internet]. International Living. [cited 2020 Jun 3]. Available from: https://internationalliving.com/countries/argentina/health-care-in-argentina/
72. Healthcare in Colombia: Low Cost and High Quality [Internet]. International Living. [cited 2020 Jun 3]. Available from: https://internationalliving.com/countries/colombia/healthcare-in-colombia/

73. Venezuela's Health Care System Ready To Collapse Amid Economic Crisis [Internet]. NPR.org. [cited 2020 Jun 3]. Available from: https://www.npr.org/2018/02/01/582469305/venezuelas-health-care-system-ready-to-collapse-amid-economic-crisis
74. Long G. Venezuela crisis: malaria spreads as economy implodes [Internet]. 2019 [cited 2020 Jun 3]. Available from: https://www.ft.com/content/d980c25a-4fbc-11e9-8f44-fe4a86c48b33
75. Guide to Health Insurance and Healthcare System in South Korea|InterNations GO [Internet]. [cited 2020 May 30]. Available from: https://www.internations.org/go/moving-to-south-korea/healthcare
76. South Korea: national health spending 2018 [Internet]. Statista. [cited 2020 May 30]. Available from: https://www.statista.com/statistics/647320/health-spending-south-korea/
77. Guide to Health Insurance and Healthcare System in the UAE|InterNations GO! [Internet]. [cited 2020 May 30]. Available from: https://www.internations.org/go/moving-to-the-uae/healthcare
78. Healthcare Resource Guide: United Arab Emirates [cited 2020 May 30]. Available from: https://2016.export.gov/industry/health/healthcareresourceguide/eg_main_108626.asp
79. What are Electronic Medical Records?|USF Health Online [Internet]. [cited 2020 Jun 23]. Available from: https://www.usfhealthonline.com/resources/key-concepts/what-are-electronic-medical-records-emr/
80. What are the differences between electronic medical records, electronic health records, and personal health records?|HealthIT.gov [Internet]. [cited 2020 Jun 23]. Available from: https://www.healthit.gov/faq/what-are-differences-between-electronic-medical-records-electronic-health-records-and-personal
81. PSNC. Electronic health records – local and national initiatives [Internet]. PSNC Main site. [cited 2020 Jun 23]. Available from: https://psnc.org.uk/contract-it/pharmacy-it/electronic-health-records/electronic-health-records-list/
82. Electronic Health Records Vulnerable to Security Breaches|Kidney News [Internet]. [cited 2020 Jun 23]. Available from: https://www.kidneynews.org/kidney-news/cover-story/electronic-health-records-vulnerable-to-security-breaches