Human Resources as a Challenge in Croatian Public Health System

Jaklin, Diana

University of Zagreb

Faculty of Economics and Business

Master in Management

HUMAN RESOURCES AS A CHALLENGE IN CROATIAN PUBLIC HEALTH SYSTEM

Master Thesis

Diana Jaklin

Zagreb, September 2020

University of Zagreb

Faculty of Economics and Business

Master in Management

HUMAN RESOURCES AS A CHALLENGE IN CROATIAN PUBLIC HEALTH SYSTEM

Master Thesis

Student: Diana Jaklin

JMBAG: 0066252507

Mentor: Šime Smolić, Ph.D.

Zagreb, September 2020

Diana Jaklin

Name and surname of student

STATEMENT ON ACADEMIC INTEGRITY

I hereby declare and confirm with my signature that this **Master Thesis** is exclusively the result of my own autonomous work based on my research and literature published, which is seen in the notes and bibliography used. I also declare that no part of the paper submitted has been made in an inappropriate way, whether by plagiarizing or infringing on any third person's copyright. Finally, I declare that no part of the paper submitted has been used for any other paper in another higher education institution, research institution or educational institution.

In Zagreb, 14.09.2020.
(date)

Student:
Diana Jaklin
(signature)

SUMMARY

Context: In recent years, new problems arose in the Croatian healthcare system. The most prominent being the emigration of doctors as a result of work dissatisfaction, poor organization etc. This study investigated the satisfaction of medical doctors in hospitals and correlates the results with the burnout effect. The impact of burnout in Croatian doctors is still not at its utmost strength but the consequences have already started to take a toll. Doctors were asked to complete a survey examining factors that influence their job satisfaction.

Main goal: To discover Human Resources challenges through the collection of data on satisfaction levels of doctors working in Zagreb's hospitals.

Respondents and methods: With a sample of 53 medical doctors working in Zagreb's hospitals, data on job satisfaction was collected using an electronic questionnaire (CAWI).

Results: Over one third of respondents (33.96%) are planning to move abroad. 50% of physicians under thirty and 58.33% of those aged between 30 and 39 intend to leave the country. Doctors employed in the public sector demonstrate dissatisfaction with their wages seen as 18.42% strongly disagree with the compensation fairness, 36.84% disagree, 23.68% neither agree nor disagree, 10.53% somewhat agree and 10.53% strongly agree.

Conclusion: Croatian healthcare system needs to be reorganized. Doctors need to be compensated better. Human Resource managers need to take into account the consequence of the burnout effect and implement prevention techniques.

Key words: healthcare system, Human Resource management, work satisfaction, burnout

Table of Contents

1 Introduction

1. 1 The aim of the paper

The goal of this paper is to address challenges in the Croatian healthcare system from the perspective of medical doctors. Furthermore, it will provide some recommendations for reforming and improving healthcare in particular that related to challenges of the workforce. Namely, Croatian medical doctors and nurses are faced with a series of problems on a daily basis. Some of these are patient related but most are organizational issues stemming from inadequate management. The continuous shortage of medical workforce is one of the core issues leading to unsatisfied workers and burnout.

Besides health workforce, Croatia also lacks healthcare facilities. The hospitals in Zagreb, the capital and the most populous city, are constantly on the verge of their maximum capacities. Patients are often transferred to Zagreb's hospitals from all parts of the country in order to get the best care possible. This often happens because other cities do not have fully equipped hospitals or are facing shortages of doctors of certain medical specialties so the only solution is to direct patients to one of the hospitals in the capital city. This phenomenon creates a well-known problem for citizens – long waiting lists. Patients with non-emergency conditions need to wait for months or sometimes even years to receive medical treatment

Additionally, the paper intends to exhibit the age structure of workforce in the healthcare sector. Trends in health workforce are changing negatively by virtue of aging medical workforce. The argumentation behind this circumstance lays in young doctors and nurses who left Croatia in order to find new, better paid jobs elsewhere. The labor force aging is already taking a toll on the healthcare system. It is important to realize that the aging workforce structure significantly influences efficiency and alertness which is noteworthy in the medical field. Bountiful problems arose after joining the European Union (EU). The EU membership increased labor relocation in nearly all industries in Croatia. Workforce mobility created a deficit of doctors and nurses which lead to the existing workers staying overtime or working double shifts. Consequently, they can become overworked, lose attention and make even critical mistakes. Thereupon, the paper

incorporates and studies the burnout effect which occurs in doctors at a very young age due to the amount of work burden and constant overtime they are experiencing.

Another aspect being investigated is the reasoning behind the ongoing trend of doctors and nurses leaving Croatia in the first place. What needs to be determined is the level of satisfaction that doctors have with regards to their pay, private lives and educational opportunities. Likewise, it is essential to identify the level of exhaustion they are facing as well as to capture their thoughts and opinions on the impact of an increase of doctors. For this reason, a primary research was conducted by interviewing doctors in Zagreb's hospitals on their work satisfaction levels through numerous elements.

The paper will examine how hospital management is involved with regards to the growing issues and how human resource management can help improve efficiency and effectiveness. Human Resources face difficulties in healthcare recruitment processes. Most problems are associated with complexities of staff turnover, low salaries and the burnout effect. Due to a higher income and poor working conditions, Croatian doctors are moving out of the country to work in far more advanced countries mainly that of the EU or the United States. An increasing number of medical students move to work elsewhere because of favorable working environments along with an abundance of educational experiences. Human Resources have a strenuous job of keeping young doctors and nurses in Croatia on the grounds of public hospitals being state owned and hospital management being unable to manipulate the pay system as easily as a private company could. This insinuates that monetary tools are not a feasible option.

The most worrisome aspect is the future of the Croatian public health system. The government is not incentivizing healthcare workers. It is doing the polar opposite by making them work in worse conditions than ever for the same salary. It could be the matter of time before the society starts to endure appalling consequences induced by incompetent management.

1.2 Methodology

This paper studies work satisfaction of doctors working in Zagreb hospitals. It compares results of participants employed in the public and private sector but also those working in both sectors. Primary research was conducted through a quantitative research method. The technique of choice was the questionnaire method. Data needed for the research was obtained through a questionnaire via which medical doctors in Zagreb expressed their attitudes, notions and perceptions on the current reality and productivity of the Croatian public healthcare system. The survey consisted of six Likert scale questions, seven polar questions, and three open end questions.

Furthermore, the thesis contains a descriptive analysis of the primary research results. Besides the survey method, information for this paper was procured through research papers and web pages closely related to the topic being reviewed.

1.2 Structure of the paper

The paper is divided in five main chapters: introduction, Human Resources in Croatian hospital sector, working conditions in the medical profession, research findings and conclusion. Each chapter, through subchapters, represents a unit being evaluated.

The introductory section defines the topic of study, aim of the thesis, methodology and structure used. The second chapter reviews the present situation and trends occurring in the healthcare workforce in Croatia and elaborates reasoning behind the phenomenon of the aging personnel. The third chapter depicts working conditions in the medical profession by elaborating on the non-specific forms of healthcare and its consequences. The fourth chapter handles the research results from the survey that was conducted and concludes findings. Lastly, conclusion rounds out the overall situation in the Croatian healthcare sector taking into account research results.

2 Human Resources in Croatian hospital sector

2.1 Trends in health workforce in Croatia

Healthcare is not free in Croatia although it is sometimes falsely considered as such. In reality, Croatian health system operates on a multiple model theory. It is a combination of the Bismarck model through which citizens have a percentage of their pay be put towards the health insurance and the Beveridge model which is based on budget revenues (Croatian Health Insurance Fund, 2020).

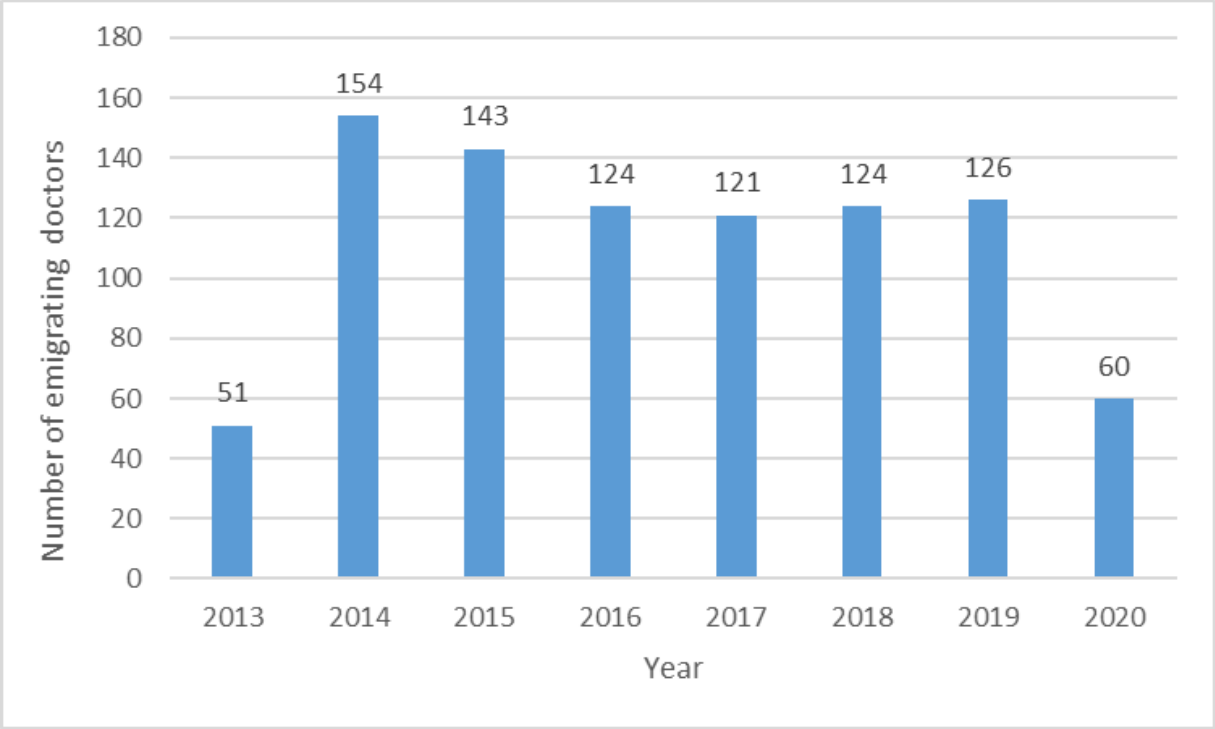
Compulsory health insurance contributions are mandatory for all employees and employers. Self-employed citizens pay contributions for compulsory health insurance for themselves. Vulnerable groups like older retirees and low income individuals are exempted from paying fees. Croatian Health Insurance Fund's budget consists of a pool of contributions paid by the working population. A certain part of the population supplements their basic insurance by paying additional health insurance with commercial insurers, which is not offered by Croatian Health Insurance Fund. Croatian Health Insurance Fund, as an additional insurance, offers the option of supplementary health insurance for a fixed amount of a monthly fee of HRK 70, regardless of the income class in which the citizen is insured (Croatian Health Insurance Fund, 2020). Croatian Health Insurance Fund covers the costs of health risks at the level of 80% within the basket of services covered by the compulsory health insurance. The rest of the cost of services, 20%, must be paid by the insured individual, and the amount borne by the insured person may not exceed more than HRK 2,000 per hospital bill (Croatian Health Insurance Fund, 2020). Out of pocket expenditure is similar to the EU average thanks to the voluntary health insurance which accounts for a significant amount (OECD, 2017).

A study conducted by a medical student at University of Zagreb asked senior year medical students about their plans on leaving the country after graduating. Astonishing 53% of graduate students, predominantly male, aspire to work abroad. The most desirable countries for future doctors are Germany, the United States of America, Canada and the United Kingdom. Students revealed that

the main reasons for leaving would be opportunities for further education and high salaries (Bojanić, 2014).

They are highly attracted to good working conditions and a positive environment. Some students already know where they want to move because they studied abroad on an exchange program and liked the country. When asked why they want to leave they expressed their concern with the negative expectations about working conditions and growth opportunities in Croatia (Bojanić, 2014). As a part of their studies, they are doing rotations and have a first-hand view on the hospital environment so they can presume what awaits them.

Figure 1 Number of doctors emigrating from Croatia



Source: HLK (2020)

Figure 1 presents the number of doctor that have emigrated Croatia since, in 2013, Croatia entered the EU until 2020. The total number adds up to 903 doctors. The average age of doctors that left was thirty-six and the average experience was eight years. Out of 903 doctors, 54% were women (HLK, 2020).

When Croatian medical students and doctors emigrate, the country is not only losing medical workforce but is experiencing capital loss. There is a direct loss for Croatia due to the departure of a doctors whose study was paid from the budget of the Republic of Croatia. The following table further explains this notion.

Table 1 Yearly loss on Medical School tuition

The average number of emigrating doctors per year	Medical School yearly tuition (€)	Medical School overall tuition per student (€)	Yearly loss (€)
115	12,000	72,000	8,280,000

Source: author's own work

On average, 115 medical doctors leave the country. The assumed price is the price that the faculty charges foreign students which is EUR 12,000 which is in most cases this amount is considerably less than the price of comparable studies in the EU or the USA (MEF, 2020). Therefore, the loss per student is a minimum of EUR 72,000, provided that the study is completed on time.

Table 2 Total loss on Medical School tuition 2013-2020

Year	Number of emigrated doctors	Medical School overall tuition per student (€)	Yearly loss (€)
2013	51	72,000	3,672,000
2014	154	72,000	11,088,000
2015	144	72,000	10,368,000
2016	124	72,000	8,928,000
2017	121	72,000	8,712,000
2018	124	72,000	8,928,000
2019	126	72,000	9,072,000
2020	60	72,000	4,320,000
TOTAL	904	72,000	65,088,000

Source: author's own work

According to Table 2, from 2013 until today, a minimum of EUR 65,000,000 has been lost. Croatia is not importing foreign doctors so by continuing to pursue this policy, it will never replace the doctors that left. Importing doctors could pose as a temporary solution just like we will see in the cases of Ireland and the UK. However, it cannot remain that way in the long run. The real question is how could those costs be distributed more fairly as to not burden the country. One suggestion is to charge emigrating doctors that worked in Croatia for less than 10 years or graduated medical

students that were offered a job in Croatia but decided to leave. A more feasible approach would be that the EU should bear part of the cost of the studies since migrations go only in one direction.

Furthermore, a viable proposal for solving this problem is to enroll at least 100 more medical students each year. This will increase the number of doctors by 50 in six years. Additionally, young doctors could be incentivized through a model in which they get an apartment and in return they have to work 15 years in Croatia.

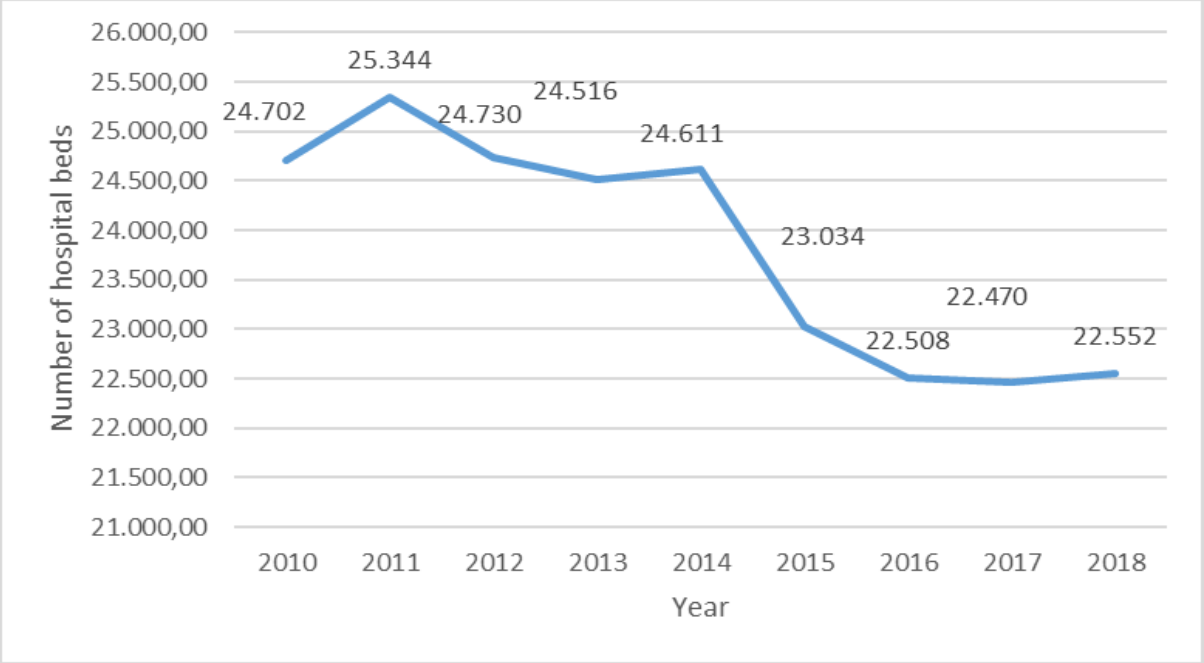
Many European countries have a deficit of doctors, aging workforce or an increase in healthcare demand so they have implemented policies of recruiting foreign doctors. An example of such country is the United Kingdom. The UK is facing a shortage of doctors and is thus under the European Union average. In contrast, Croatia has a higher number of medical doctors despite their outflow to the UK. Although, Croatia has the same problem as the UK, the reasoning behind the shortage of doctors is different. Namely, the United Kingdom is lacking medical students. Their total number of medical students is not enough to meet the demands of its aging population. Another issue is that their doctors are retiring early. UK's Health Secretary stated the following: "It is interesting that Health Education England estimates that we were training about 6,500 doctors a year and we needed to train about 8,000 a year to be self-sufficient" (Taylor, 2020).

The country employed 10,686 doctors from EU which accounts for 9.7% of total medical doctors in the UK. Their short term solution is to recruit foreign medical doctors but the long term plan is to open new medical schools in the following ten years as well as to increase the entrance quota in existing schools (Taylor, 2020). The United Kingdom is not the only country with this problem. Germany is also recruiting foreign physicians to keep up with the demand. Germany's doctors are moving abroad so the country resorts to hiring foreign medical doctors. Moreover, there are more German doctors leaving the country than there are foreign doctors immigrating (Kopetsch, 2009).

Likewise, France is dealing with a shortage of doctors having similar challenges to the United Kingdom. They will need to increase the number of medical students to improve the situation instead of recruiting from abroad (Segouin , et al., 2007). Ireland is relying on foreign doctors because their young doctors are emigrating, mainly to the United Kingdom (Bidwel, et al., 2012). This practice is not sustainable in the long run.

These countries attract young doctors with better working conditions and work-life balance. Croatian health system will bare serious consequences due to the negative emigration trend of doctors. The majority of medical students that were surveyed and have plans to leave Croatia are those with high great point average which means that Croatia would suffer a great intellectual capital loss. In the next section we analyze technical elements of the healthcare system.

Figure 2 Hospital beds in public ownership



Source: Eurostat (2019a)

Figure 2 shows the number of hospital beds per year in public ownerships from 2010 to 2018. The overall trend is negative, exhibiting a decline in hospital beds for as much as 2,150 beds in eight years. This is not an optimal situation to take care of a growing healthcare demand. A decline in hospital beds reduces the quality of care because doctors need to prioritize the most urgent cases which puts pressure on them to choose patients that can stay in the hospital.

2.2 Health workforce aging

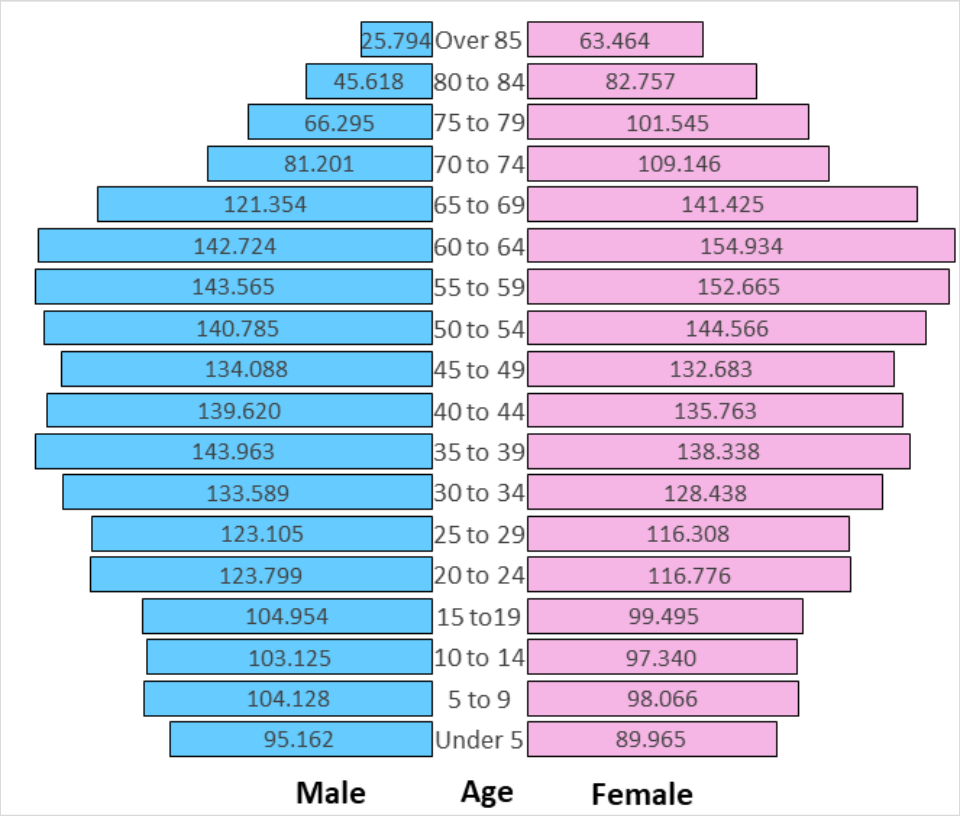
Ageing population, declining birth rates and complex international migration are increasingly influencing demographic patterns in Europe. Eastern Europe is currently witnessing the lowest immigration numbers and a migration of its work force. The effect of such demographic trends on the country's ongoing and prospective healthcare depends on how governments in recent years have planned and adapted to changing demographics. Shifts in age structure may impose increased pressure on healthcare (Azzopardi-Muscat & England, 2017).

Considering its population, Croatia is deemed a rather old nation. Demographic forecasts show a further rise in expected number of people over the age of 65. Such a situation has many causative factors. This finding will have negative repercussions for economic welfare and healthcare burden.

The ageing of Croatian population occurred over the past decades due to a combination of several factors, such as improvements in nutrition and health care whereby the average life expectancy of Croats began to increase. Next, a shift from rural to urban living fostered mass migrations of younger people to several large urban areas, resulted in marked ageing of the population in rural areas. Another important contributing factor to the ageing of Croatia's population is the exodus of working age citizens from the country. The detrimental result of all these combined factors is already visible in Croatia's population pyramid which is visibly contracting. As a result of this rapid population ageing, the country is already experiencing issues in the economics of their healthcare system and pension system which is funded mostly from contributions made by the working population (Murgic, et al., 2009).

Health expenses are in perpetual growth in the public healthcare system primarily attributed to the rising proportion of the elderly in the overall population. Some institutional changes are required to address this problem as well as to prevent a breakdown of the economy and a confrontation between generations. Croatia also has a lot of unemployed young people who are additionally burdening the national economy. Croatia is beginning to participate in requesting legal changes concerning families, employment, and pensions. Healthcare services for the elderly are of tremendous significance for the growth of the Croatian economy (Murgic, et al., 2009).

Figure 3 Age and sex distribution of Croatian population in 2019

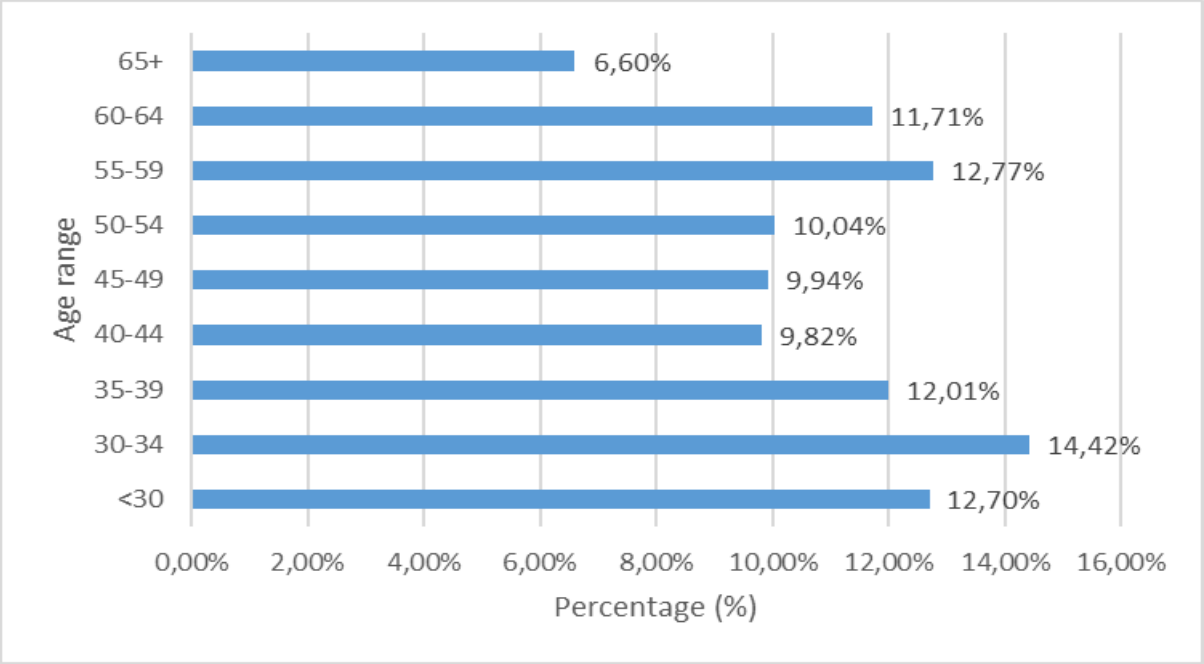


Source: Eurostat (2020b)

Figure 3 displays the age distribution pyramid of Croatian population in 2019. Croatian population is aging which is clear from the constrictive shape of the population pyramid. There is a small proportion of young population whereas the largest proportion is within middle to pre-retirement aged individuals. The pyramid base is narrow indicating a low fertility rate. The pyramid is almost symmetric meaning that there is no significant difference between the male and female population. It shows that there are more women at age ranges over 50 illustrating that Croatian women live longer than men. Given that a large part of the population is about to retire, it could further burden the healthcare system in the near future.

The pyramid is sliding upwards revealing that population will be even older in the future. The overall trend is a decline in Croatian population.

Figure 4 Age structure of Croatian medical doctors in 2020



Source: HLK (2020)

Figure 4 shows the age structure of Croatian medical doctors. All together Croatia has 15,376 of medical doctors. The highest number of doctors is in the age group of 30-34, 2,217 of them. The average age of physicians is 46 years. The proportion of women to men is high with 63% of doctors being female. Although the number of doctors aged 65+ is the lowest it is important to note that 514 of them are retired and working four hours a day (HLK, 2020). In 2017, the oldest doctors were located in the western region of Croatia with the mean age being 47 years and the oldest specialist doctors were found in the western and southern regions with a mean age of 52 years. (Smolić et al., 2017).

Over the next ten years, the highest number of physicians to date will enter the retirement contingent. In addition, the largest number of physicians to date will graduate from Croatian medical schools. The integration of physicians to the national healthcare system and their appropriate allocation will be a major challenge, and also an obligation for health policy makers, keeping in mind that there is a population growth in the 65+ age group as well as a tendency for young doctors to leave the country. It is about time plans and strategies are developed that would offer a reliable and sustainable solution. Based on the population pyramid, over 60,000 Croatians will retire within the next ten years, among them are more than 4,000 experienced doctors. The

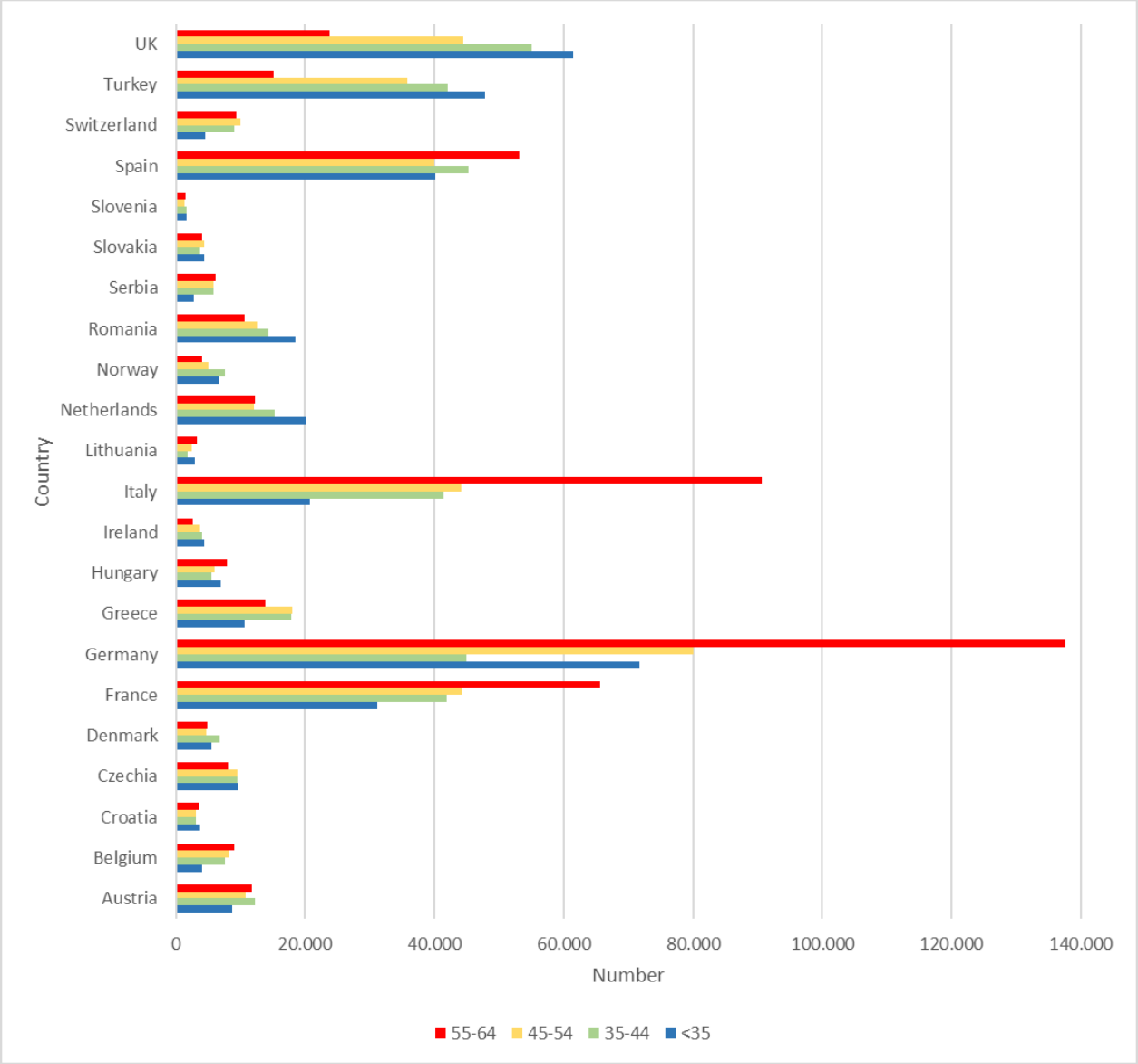
concern is, will the country be able to replace them. It is important to have a plan to substitute them, particularly because it takes a relatively long time to educate and train specialist doctors (Smolić, et al., 2017).

Because of the lengthy training process for medical doctors, short-term changes in laws and regulations governing physician training are not an appropriate solution to short-term disparities between doctor supply and demand, which may exist in some areas of Croatia. It requires medium-term planning to reduce potential future short-term discrepancies. The number of doctors differs according to counties and regions. Some counties lack an adequate number of physicians, particularly at the primary health care level. Growing numbers of elderly people in Croatia who need medical treatment will have trouble seeking adequate healthcare (Smolić et al., 2017).

The workload of medical doctors is above the recommended 40 working hours per week at the secondary and tertiary healthcare levels. The greatest deviation from the prescribed workload was found in hospitals and clinics where doctors exceeded the working hours determined by law by 10% in 2016. As hospital complexity decreases, physician shortages increase thus the average workload per physician increases (Smolić & Barić, 2012).

In Croatian healthcare system, there are differences in the workload of doctors by gender. The explanations for the disparities in overall workload by gender can be found in women's more frequent absence from work. This is the case because, usually, women are the ones taking care of sick children and other family members. The aging of the population, the prevalence of chronic and degenerative diseases, which impair physical and mental health, should be at the core of the indicators assessed. It is therefore essential to note the importance of the new framework creation with regards to disease management focusing on prevention (Smolić et al., 2017).

Figure 5 Medical doctors (practicing physicians) in Europe by main age groups

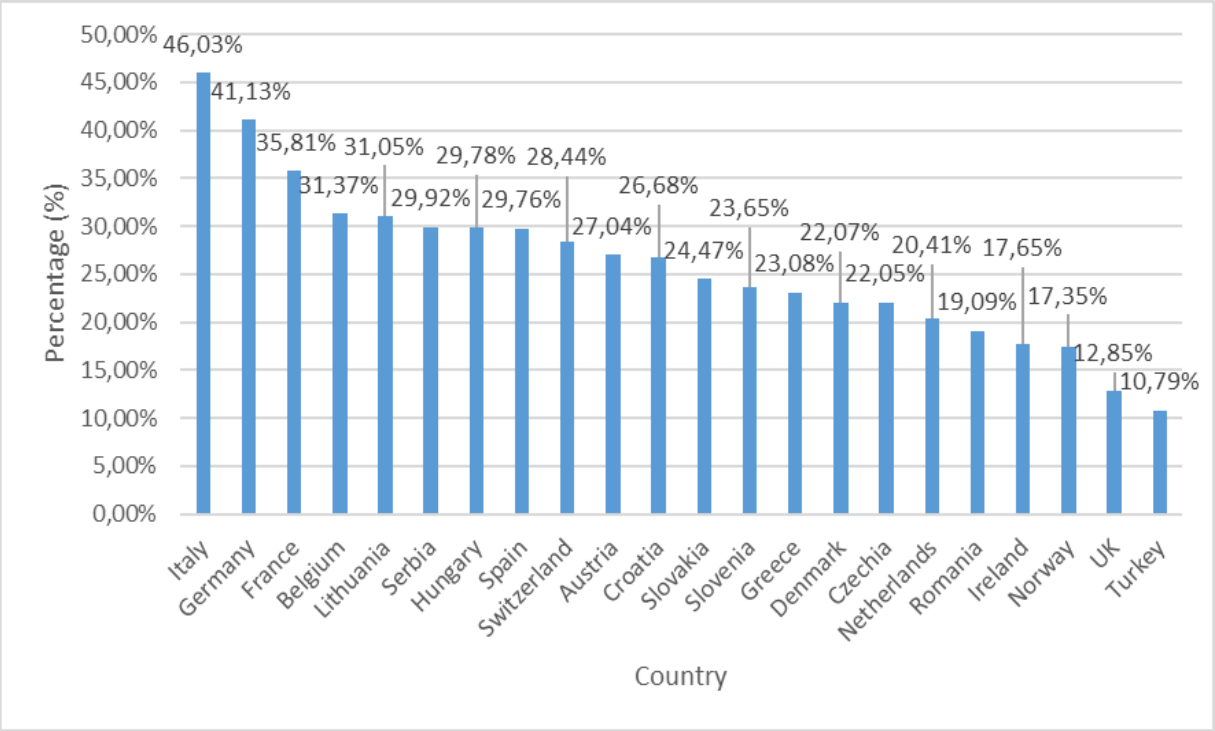


Source: Eurostat (2020a)

Figure 5 represents the age structure of physicians from the majority of European countries. It is immediately clear that Germany has the greatest disparity of old versus young doctors. Surprisingly, numbers for Croatia show the largest population of doctors being under 35 years. This would not be concerning if young doctors were not planning to emigrate. Croatia is in a difficult position compared to other EU countries with regards to the older age group which is about to retire. High numbers are also seen in the age group from 45 to 54 years. This means that

Croatian population of medical doctors is aging i.e. in 10 years, a large number of doctors will retire and there will not be a suitable number of young doctors to replace them.

Figure 6 Medical doctors aged 55-64 in Europe (as a share of total number of doctors)



Source: Eurostat (2020a)

Figure 6 displays a share of total number of medical doctors per country in the age range 55-64 in a descending order. This population is about to retire and leave the healthcare system. Italy has the highest share of older doctors, 46.03% which is leading to serious shortage of physicians. Germany, France and Belgium follow with lower yet still significant shares. Croatia is in the middle of this chart with 26.68%.

Croatian young doctors are clearly not satisfied since they are moving abroad so improvements need to take place. The first step would be to investigate the reasons behind dissatisfaction.

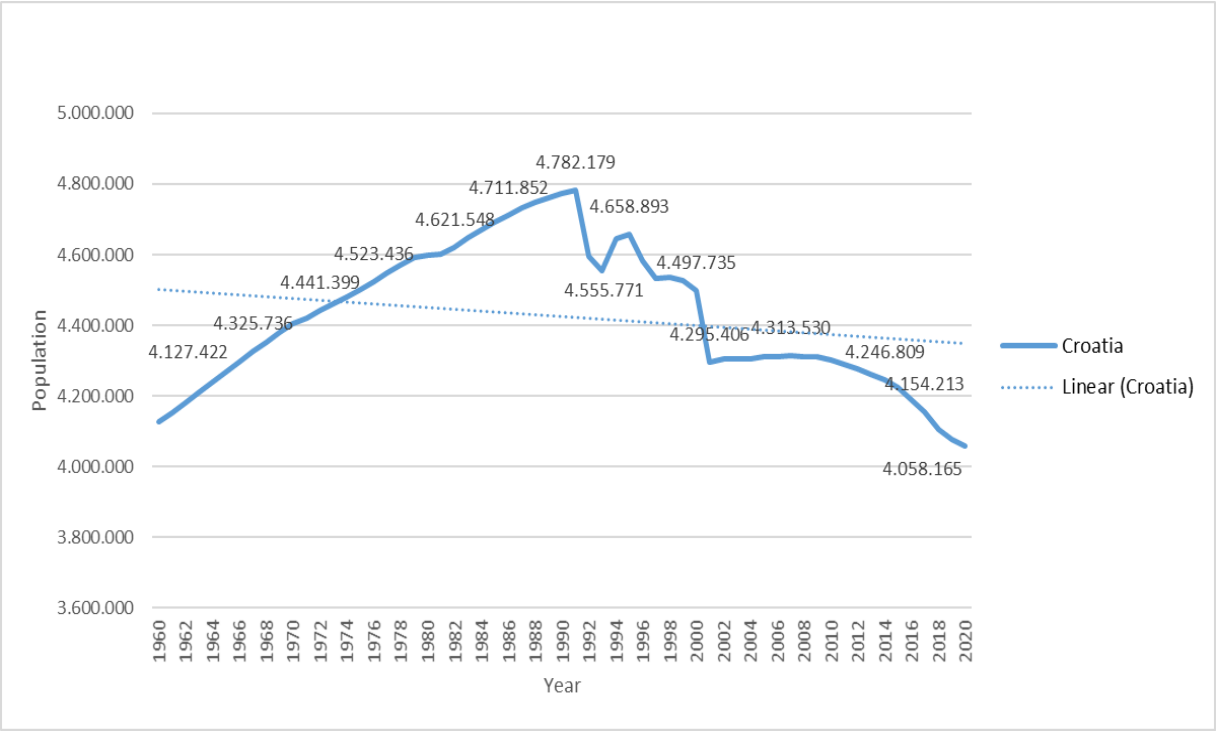
The study *Satisfaction of Young Doctors in Croatia: Are We Heading in The Right Direction?* is the first research conducted to evaluate satisfaction levels of young doctors in Croatia. Authors investigated physician contentment in several Croatian hospitals and health centers in 2016. Astonishing 58% of interviewees expressed the desire to leave Croatia, move and continue their

career abroad. This percentage, although high, is not at all surprising since young Croatian doctors began to increasingly leave Croatia after the country joined the European Union. Based on this study, the most common reason for leaving Croatia are better working conditions followed by a better regulation of health system, greater possibilities for professional training and advancement, higher salary, dissatisfaction with personal relationships at the current working place, and dissatisfaction with the current situation in Croatia. Only nine percent were not considering leaving Croatia (Babacanli, 2016).

The long-term issue with doctors being dissatisfied is that they leave the country which leads a lack of doctors in hospitals subsequently creating long waiting lists and propagating a downfall in quality of the entire healthcare system. If doctors are dissatisfied now, it will only get worse when the majority leaves and those that are left need to take care of more patients than they can fit in their regular working hours making them stay overtime and become overtired. This leads to the drop in quality and will have a great impact on patients.

Consequences arising from this problem encompass an intensified burden on medical professionals and needlessly lengthy waiting lists before appointments. It will lower the quality of care doctors will be able to provide. This is already taking place as doctors have less time to examine and treat patients. In this study doctors were asked whether they spend less than or over thirty minutes with patients and only 26.42% spend over thirty minutes with their patients. Patients that are financially better off, go to private medical institutions to get examined and treated. This means that they spend extra money on healthcare even though they are still paying for the public healthcare they are not utilizing. Patients pay more to get less.

Figure 7 Population of Croatia 1960 – 2020

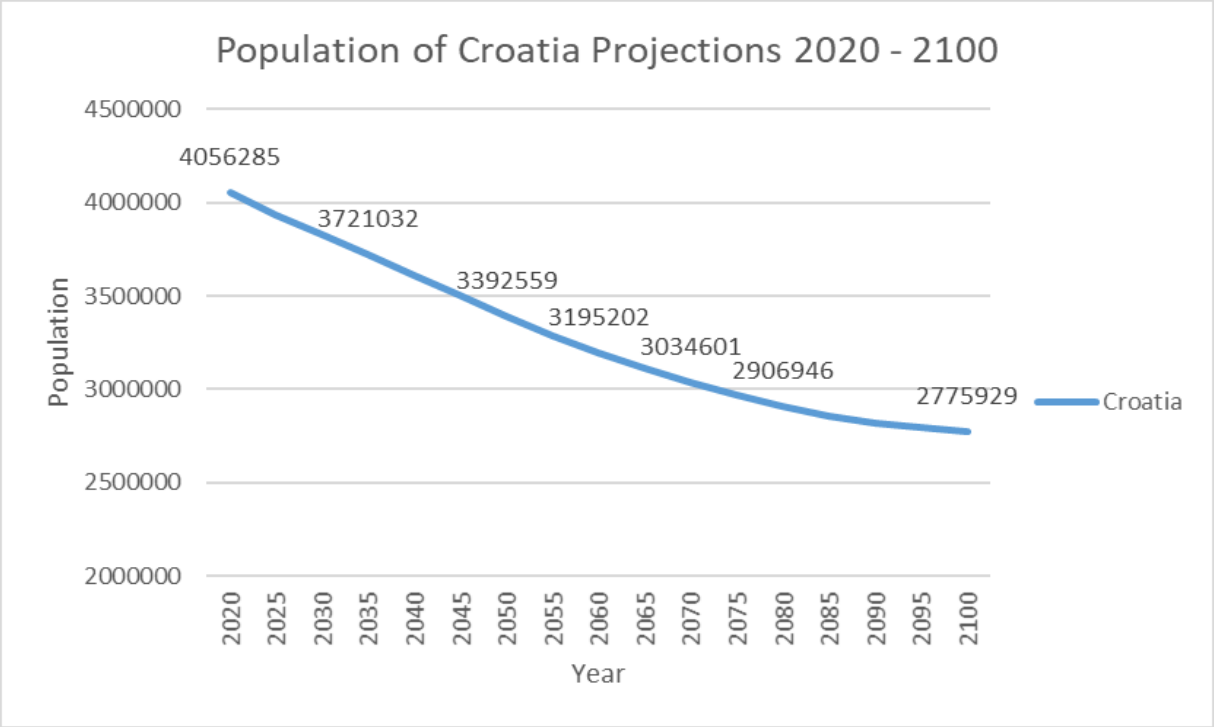


Source: Eurostat (2020d)

Figure 7 displays the change in population of Croatia from 1960 until 2020. The population increased considerably having a spike in 1990 with 4,782,179 people. Population plummeted after the year 1990 because of the Homeland war. A significant amount of population emigrated due to the start of the war and the fall of political stability. Even thirty years after, the population levels have still not recovered. The overall trend shows a negative movement with population in 2020 being 4,058,165.

This piece of information is relevant to the topic seen as the majority of the population that is leaving is a young and healthy. A significant portion of the young population emigrating are doctors which is enlarging problems in healthcare. The elderly population remains, which uses health services much more and creates more pressure and burdens on the system and thus on doctors.

Figure 8 Population of Croatia projections 2020 - 2100



Source: Eurostat (2020d)

Figure 8 illustrates the projections of Croatian population trend line from 2020 until 2100. It is apparent that there will be a further fall of the population levels. If we compare the data from 1990 where Croatia had the highest population of 4,782,179 to the year 2100 where the population is projected to be 2,775,929, the country is expecting a dramatic drop of 58.04%. The logic behind negative population trends is in the positive emigration trend. If the population continues to age and young doctors continue to leave, the burden on healthcare will intensify. These projections correspond to the current population pyramid meaning that the Croatian healthcare system needs to be revised before it starts to suffer serious consequences.

Table 3 Population age structure by major age groups, 2009 and 2019

(% of total population)							
Age range	**0–14**		**15–64**		**65 an over**		**Change (in p.p.)**
Year	**2009**	**2019**	**2009**	**2019**	**2009**	**2019**	**2019/2009 Δ**
EU - 27 countries	15,4	15,2	67,0	64,6	17,4	20,3	2,9
Croatia	15,4	14,4	66,7	65,0	17,9	20,6	2,7

Source: Eurostat (2020c)

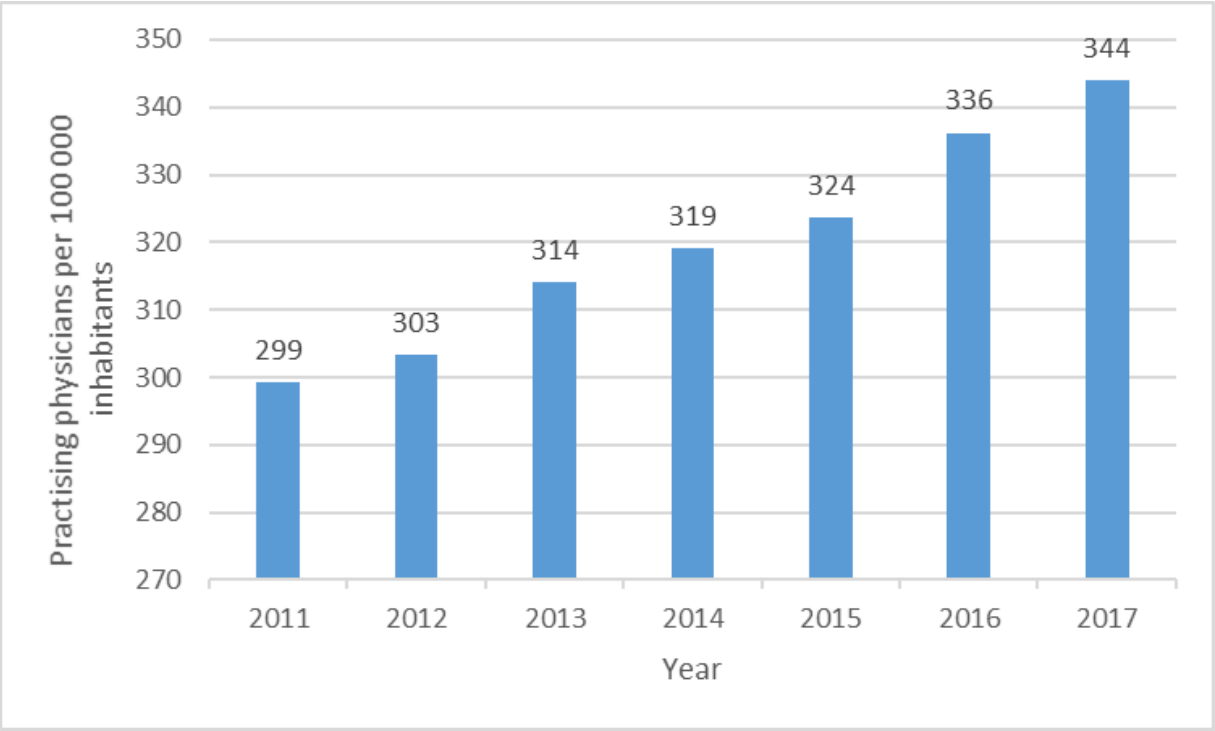
Table 3 represents the percentages of the total population present in three main age ranges in a ten-year span, from the year 2009 to the year 2019. The proportion of children aged 14 and under declined by 0.2 percentage points. A fall also occurred in the percentage of population aged 15 – 64, by 2.4 percentage points. On the other hand, the amount of individuals aged 65 years and over rose. The last column shows the percentage change of the population aged 65 and over comparing 2009 and 2019. Those ten years resulted in a 2.9 percentage points increase in the retiree population. In all reviewed aspects, Croatia is slightly above the EU average.

Therefore, even though the Croatian population is declining rapidly, the population age structure shows aging population, hence, an increase in retired population. Accordingly, the demand for doctors is growing faster than supply seen as older population needs medical services oftentimes.

This problem is not limited to Croatia; it is a worldwide concern. Most European countries are facing the same situation but undeveloped or developing countries across Asia and Africa have positive fertility trends and ascending population levels making their healthcare circumstances more complicated.

Repercussions will be seen through the world health. Pandemics, like the current COVID-19 or natural catastrophes might occur and cause even more damage considering the shortage of physicians (Zlatanova-Velikova, 2010).

Figure 9 Croatian practicing physicians, 2013 and 2018, per 100 000 inhabitants



Source: Eurostat (2020a)

Figure 9 presents numbers of practicing physicians in Croatia from 2013 until 2017 per 100,000 inhabitants. In 2017, Croatian population was 4,182,857 (Worldometer, 2020). If we take data from the line graph, 344 physicians, there were 14,391 practicing physicians in Croatia that year. Based on this data, the number of doctors is increasing which insinuates positive trends, yet the healthcare demand is increasing more than proportionally making this increase insufficient.

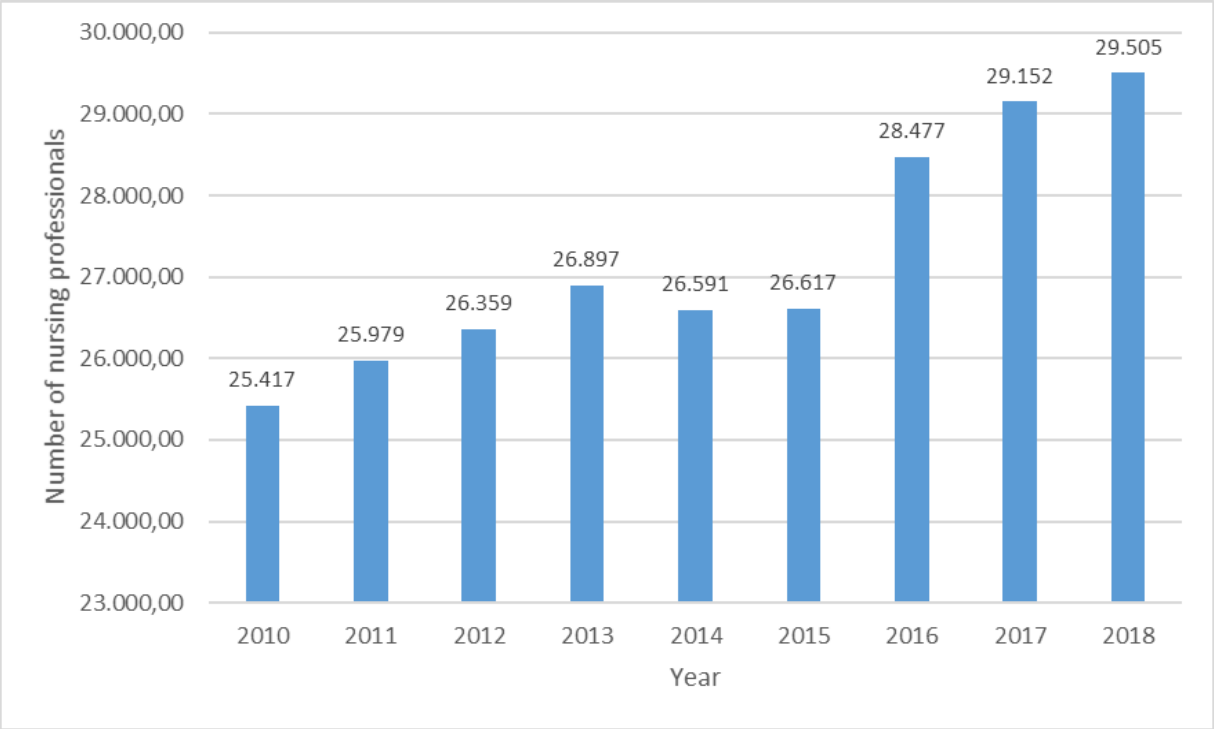
"According to World Health Organization, there is a deficit of more than 4 million doctors, nurses, midwives and other health professionals" (Zlatanova-Velikova, 2010, p.414).

Healthcare professionals' key tasks seek to improve the wellbeing of people. This lack of doctors is doubtless to have a substantial influence on the population's health. One way to improve it would be to boost greater technology utilization. If that option is financially or logistically unattainable, a more effective collaboration between medical professionals and organization might facilitate better results.

The dilemma is whether an increase in enrollment quotas could help reduce the effects of the shortage of doctors. Zagreb's School of Medicine accepts only three hundred students each year which seems like a large sum of doctors getting employed each year but the reality is that not everyone graduates and a large part of those that do emigrate. The problem of young doctor emigration could be solved if, similarly to how scholarships work, they had to pay for their studies when choosing to work abroad. In Zagreb, public university is free for students that pass all exams in given terms meaning that the funding comes from all citizens. If the society is funding one's studies it is reasonable to stay and work in the country for a few years.

Besides doctors leaving, nurses have also been taking the same path. Let us asses the severity of the situation by looking at the number of nurses in Croatia.

Figure 10 Number of nursing professionals in Croatia



Source: Eurostat (2019b)

Figure 10 shows a positive trend in the number of nursing professionals in Croatia from 2010 until 2018. This pattern, if continued, is promising in terms of supporting the doctors on a greater scale.

Since there is a deficit of doctors but an increasing number of nurses each year, nurses can take some of the burden from doctors by taking on non-complicated cases they have been trained to solve. Likewise, nurses could be further educated to learn how to treat lower impact injuries and free up doctor's time for more serious treatments. This would decrease the stress in doctors and increase efficacy and the quality of care.

Human resource management is a crucial part of the healthcare system. Human resource managers are the ones dealing with the ongoing trends of emigrating doctors. Namely, the demand for the best medicine students and young doctors outside Croatian borders is rising. Other countries are also facing the lack of supply of medical professionals but they are solving it through high levels of immigration since countries like UK and Switzerland are very attractive to young Croatian medical professionals (Smolić & Barić, 2012).

Health economics directly depends upon health resources. Health resources are dependent on the health supply, in this case pharmaceutical products, health workers, capital goods and various equipment (Smolić & Barić, 2012). Like most resources, these are often restricted while demand is generally endless. Inevitably, compromises need to occur between the costs of new workers and new equipment regularly siding with disregarding new equipment because machines will never truly replace medical professionals.

Reasons for migration go beyond social and cultural factors. Medical professionals immigrate in order to find and attain a better lifestyle in terms of pay, benefits, working conditions, work-life balance, living arrangements, responsibility and working hours. Croatian public health sector uses push factor while Ireland's health sector uses pull factors which attract Croatian doctors. The development level of a certain country is an important factor in migration levels. Less developed countries are facing emigration to the developed countries that can offer more. The focus should be on the development of Human Resource management in the public healthcare system of Croatia through education, increasing the quality of human capital and improving salaries (Smolić & Barić, 2012).

In 2015, the government implemented a five-year Human Resource plan in order to create a Human Resources management system (Smolić & Barić, 2012). Compared to the EU average, the number of physicians and especially nurses in Croatia is small. When Croatia entered the European Union, doctors and nurses gained labor mobility resulting in medical workforce deficit making those numbers even lower (OECD, 2017).

A similar study was carried out in Greece, where researchers asked junior Greek doctors to rate their work satisfaction. The overall findings suggest discontent where women were more dissatisfied with their jobs than their male colleagues. Regardless of gender, the young doctors were severely unhappy with their salaries (Roditis, et al., 2019).

Job dissatisfaction triggers among doctors are caused by the stressful environment they face on a daily basis. Stress is harmful for both physical and mental health of doctors and it occurs when job requirements fail to complement available means and the culture and climate of hospitals. Doctors often encounter absence of support from their superiors. They generally have little to no control over decisions, their jobs are interdependent and full of responsibility, they are afraid to ask for help because of being stigmatized and they often feel guilty when attempting to take care of themselves. Doctors are under a lot of pressure because patients and colleagues expect them to know everything and make no mistakes which makes the medical field one of the most stressful fields to work in.

Further investment in healthcare staff education and assistance would certainly aid healthcare workers (Zlatanova-Velikova, 2010). Additionally, updated management style could help distribute and organize workload. Less complicated or administrative work could be divided among less skilled or experienced doctors to increase efficiency and free up time for complex cases.

3 Working conditions in medical profession

3.1 Non-specific forms of healthcare

Croatian doctors work long hours regardless of their official working hours. They are on call and work overtime which poses serious complications in the work-life balance but also result in a decline of patient care quality.

Demographic aging is causing an increase in healthcare demand in Croatia. There is a positive trend in chronic diseases so the need for doctors is growing. This leads to doctors working overtime instead of staying within the state regulated working hours. Working overtime causes circadian rhythm disorder which is a sleep disorder often contributing insomnia and a decline in cognitive and motor skills (Smolić, 2018). When doctors are on call, they work twenty-four hour shifts. This makes them less responsive to urgent situations as their concentration levels diffuse. Further complications include work accidents and various mental and bodily illnesses.

The only way to change the healthcare system from top to bottom would be to reengineer the entire system. Unfortunately, there is no one strategy suitable for all healthcare systems so various proposals need to be examined before settling onto one model (Boland, 1996).

Under the current healthcare system, the emergency room is classified by outpatient emergency medical services and patient admission within a single facility and only exceptionally through unified emergency room admissions. Doctors working in the emergency room are stressed. Even though some reorganization measures were done in 2011, it is still not at a satisfactory level (Predavec, et al., 2010).

Croatian hospitals have designated Human Resource departments. Each hospital is a case for itself and has a different array of ongoing problems but they all need to have some basics in order. Each HR department has a head of the department who should, by all means, be competent for that position. Since the head of the department is in charge, he/she needs to make sure that all subordinates have completed the necessary training and are knowledgeable. HR department needs to define the organizational strategy and culture (Khatri, et al., 2006). Every hospital has a different culture based on what fits it best. Now that we know that all Zagreb's hospitals have issues with

burnout and a deficit of doctors, it would be hard to change the corporate culture. HR managers could attempt to change it gradually but there is no guarantee they would succeed. What they could improve upon is certainly an implementation or revision of reward systems.

They need to keep in mind that something that motivates one doctor might completely demotivate another one. As a situational approach suggests, each employee is different so HR managers need to find out what motivates each of them. through surveys or conversations.

HR managers have a choice of using material or non-material compensations. Since public hospitals are government funded, HR managers do not have the authority to increase wages as they please so they could option for the indirect compensations such as an additional medical outfit or an education scholarship. Public companies have a much harder job in employee motivation due to extensive hierarchies and limited budgets. The recognition element from the total rewards model stands out as being possible for a public hospital to implement. It would be an affordable way of formally or informally recognizing the efforts and work ethics of doctors.

Human Resources have an important role in hospital management through various activities such as recruitment and performance management and appraisal (McDermott & Keating, 2011). Performance management clarifies job responsibilities and expectations all while improving productivity. It allows for employees, in this case doctors, to hear feedback on their work and advance in the field. Good performance management promotes effective employee-superior communication.

Performance appraisal might be a good motivator technique. It determines how well doctors do their jobs relative to a standard and reports their results to them. Performance appraisals ensure effective outcome of performance management. When developing performance appraisal tools, alignment with organizational culture needs to happen. Performance tools need to be clear and supported by instructions or examples. Doctors do not have enough time to spend on attempting to figure it out. Performance tool should include demographic information about employees. There is a plethora of rating methods but the two classic ones are the graphic rating scale and the behaviorally anchored rating scale (BARS) (Lunenburg, 2012). The performance tool should be job related meaning that performance appraisal tools should be directly connected to the job description. There should be different evaluation forms for specific roles and job groups.

Table 4 Job evaluation form

Performance Level / Work Dimension	Poor	Fairly poor	Fairly good	Good	Excellent
A. GENERAL WORK HABITS					
a. Punctuality					
b. Ethical conduct					
c. Emotional stability					
B. KNOWLEDGE AND SKILLS					
a. Basic medical and clinical knowledge					
b. Competence in clinical and technical skills					
c. Physical examination skills					
C. PATIENT MANAGEMENT					
a. Creates a calming atmosphere					
b. History and physical exam taking					
c. Uses appropriate language					
D. INTERACTION WITH HOSPITAL STAFF					
a. Relationship with doctors					
b. Relationship with nurses					
c. Relationship with management					

Source: author's compilation work

Table 4 is an example of a job evaluation form. In real situations, the form should be tailored to each institution but the core purpose of a job evaluation form is present in the table. The evaluator must remain objective while filling out the form. There are four categories shown but that is not a requirement. The form should, however, cover all important segments like work habits, knowledge,

interaction and management of patients and interaction with other hospital staff. The best solution would be to use a flexible form that references the job description of a doctor when addressing role based competencies including employee self-evaluation.

Self-evaluation can provide key benefits to the organization by making doctors more engaged with their performance. Besides that, superiors can view performance as employees see it. Well defined goals reinforce effective communication. Goals should be written in the SMART form: specific, measurable, achievable, relevant and time-based (Lunenburg, 2012). By identifying employee strengths and weaknesses, superiors can inform employees about their progress and discuss areas where training might be beneficial. In the public healthcare system, pay system is fixed and time-based. If possible, it would be useful to implement variable pay plans that measure performance through performance appraisals. It would enable the system to reward hardworking doctors and motivate others.

3.2 Consequences of non-specific forms of work in healthcare

The burnout effect is the main consequence of non-specific forms of work in healthcare. J. Sweeny of Washington State University defined job burnout as a "dysfunctional psychological stress syndrome consisting of three distinct dimensions—emotional exhaustion, depersonalization, and reduced personal accomplishment" (Sweeney & Summers, 2002).

Burnout within doctors is described as an emotional distress found in doctors that either have a lot of burden placed on them or work fast-paced and often stay overtime (Amoafo, et al., 2015). Burnout makes them stop feeling connected to their jobs as they are no longer motivated. Lack of motivation leads to a negative effect on work quality because doctors begin to work superficially. Due to high stress levels, mistakes occur more frequently. Doctors become unsatisfied with their job positions because their private lives are suffering. Working hours play a key role in job satisfaction. Since younger doctors work longer hours, they are more prone to burnout and the decline in quality of life. Croatian health system already has a problem of doctor deficits and now the burnout effect is lowering the quality of public healthcare even further.

Pines and Arson claim that burnout is primarily created by the environment and does not represent individual failure (Pines & Aronson, 1988). This means that there is a universal inclination for a person to develop and pursue significance and that consciousness and intervention can interrupt the phenomenon of burnout. Only highly motivated doctors with high performance expectations will experience burnout while everyone can encounter stress (Schaufeli, et al., 1993).

Stress in the workplace occurs as a result of the negative working environment. It is an imbalance between expectations and capabilities and the need to please everyone. It this case, doctors strive to please patients and colleagues all while creating a positive public image. Each doctor responds and interprets situations subjectively which proves to show that perfectionist fall under stress much more often. In many cases, low levels of stress can be motivating and encouraging while high levels of stress diminish doctor's true abilities and demotivate. Human Resources department cannot remove all stress triggers but it can attempt to lower the ones that can be controlled.

A study conducted among doctors in Ireland in 2004, showed that 56% consider their jobs as being exceedingly stressful and the astounding 79% claim to be unsatisfied with their jobs. These results reflect the real picture of the medical field across most nations and show how stressors create displeasure. Stressors are triggers that create tension and psychological discomfort within individuals. The most common stressors among doctors are high priority emergency cases, being on call, making difficult decisions after being on all and the inability to inability to progress (Knežević, 2009).

Poor management can also trigger individuals especially when as a result there are inadequate resources for medical procedures (Selmanović, 2012). Emotional and physical exhaustion occur correspondingly to a faulty organization.

Similar to the Irish study, in a research conducted in 2008, Zagreb's healthcare workers situated in public hospitals were surveyed about the stress in the workplace. The response rate was 78% of which 17% male and 83% female doctors and nurses. Doctors rated their stress levels higher than the nurses did and expressed the connection of stressors to the financial aspect. Three quarters of doctors were not satisfied with their salaries. Some doctors stated that another stress trigger for them is the fear of public critics (Knežević, 2009). Often times unqualified journalists critique doctors and discredit them due to subjective experiences.

A research from 2019 examined burnout among Croatian physicians. Out of 2557 physicians, 67% revealed they are burned out. Authors suggested national measures to take place in order to scale down burnout of Croatian doctors (Kopjar, et al., 2019). Burnout can lead to workers quitting their jobs or moving elsewhere to find better opportunities.

A few suggestions to treat burnout include changing the working sequence by lowering working hours or increasing the length of breaks. Furthermore, having access to professional and social support could reduce stress. Doctors could explore the options of adopting some relaxing methods (Maslach & Leiter, 2016). HR department should emphasize the importance of burnout prevention by promoting of self-care.

Doctors who have high job expectations are more prone to burnout. A study conducted in Romania proved that there is connection between perfectionism, stress, psychopathological symptoms and burnout in the medical field. Physicians with strong perfectionism traits might even have a notable tendency to interpret various life conditions as being more challenging, along with being more likely to experience burnout symptoms. In the medical profession, burnout may have a harmful influence on the care effectiveness. Being able to make the distinction between stress and perfectionism can aid doctors recognize the classic symptoms of burnout (Craiovan, 2013).

If doctors are not appropriately rewarded, they will not feel their job is proportionally important to their pay so they will either work poorly or exhaust themselves (Maslach, et al., 2001). Unfortunately, burnout is widespread among doctors. Employee fulfillment, educational and learning programs appear to shield from burnout (Ožvačić Adžić, 2013). Doctors suffering burnout tend to make more mistakes while treating patients. Low emotional intelligence promotes burnout in young doctors so HR managers need to offer emotional intelligence training (Swami, et al., 2013).

Unless the structure of healthcare, insufficient personnel levels, and the monetary component do not improve, the intensity of burden will rise, reflecting on the development of the burnout effect, but also decreasing the willingness to work thus the quality of care provided (Sambolec & Železnik, 2018).

4 Research findings

4.1 Survey methods and data

Research was conducted among doctors in Zagreb's hospitals which work either in the public or private sector. Fifty-three doctors filled out the survey which was distributed online through Google Forms. The survey questioned satisfaction levels through various factors.

The questionnaire was composed out of twenty-one questions. In the first part of the questionnaire, respondents were asked to give general information such as gender, age range, working sector and workplace. Participants were asked to rate six satisfaction factors on a Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Factors examined were job satisfaction, private life contentment, pay satisfaction, the realization of expectations prior to working and satisfaction with the amount of professional education offered.

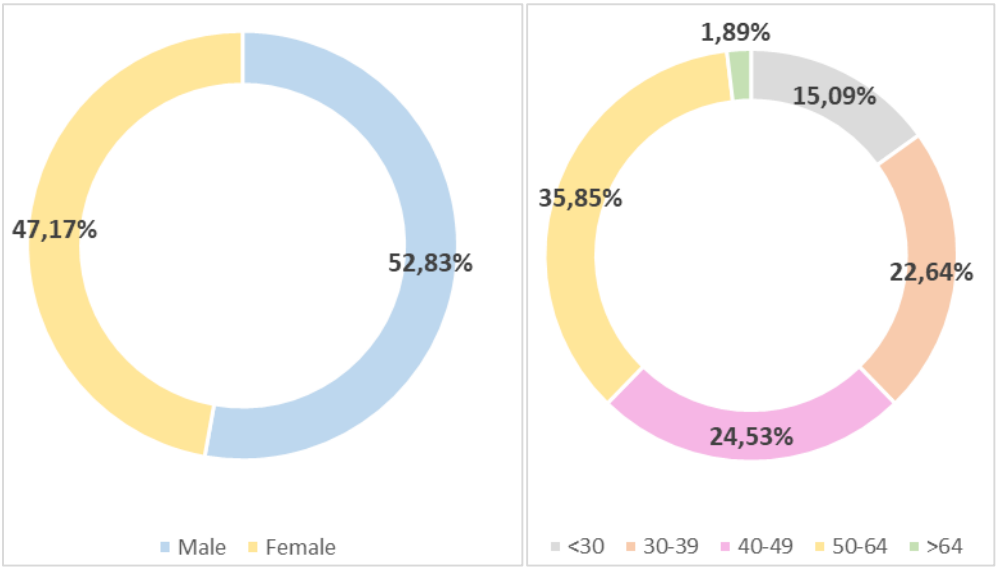
The third part was composed out of yes/no questions. Respondents were asked about their intentions of leaving Croatia, time spent with patients, waiting lists and other stressors affecting satisfaction. The last section asked what they think would happen if doctors in hospitals worked exclusively during working hours. That question was open ended and participants were encouraged to share their perspectives.

The questionnaire was written in Croatian language. It was voluntary and anonymous and was distributed online through Google Forms. The survey about satisfaction levels was created solely for the purpose of this thesis.

4.2 Descriptive findings

Now that we have described the data in a qualitative manner, we shall subsequently shift our focus towards a statistical analysis. We begin by presenting the substantial general information regarding the survey respondents. These results are presented in the following parts.

Figure 11 Sex and age distribution of the respondents

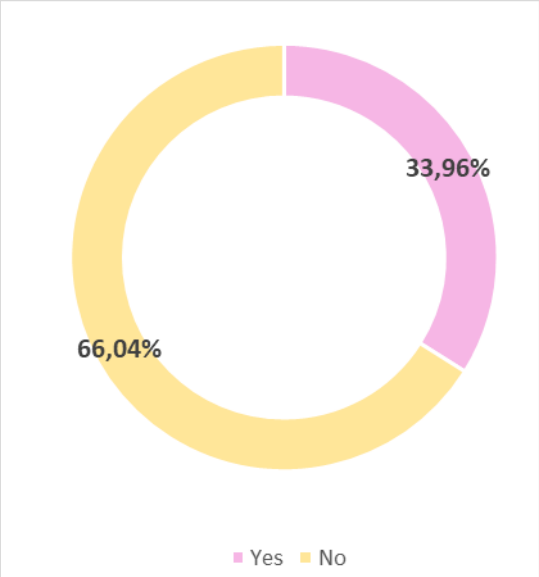


Source: author's work

Figure 11 shows gender of survey participants. Out of 53 surveyed participants, 52.83% were male while 47.17% were female. The difference is not of significant value as there is a good proportion of both genders present. Further analysis show differences in answers to the same questions based solely on gender.

The largest percentage are in 50 – 64 age group (35.85% of respondents), followed by those in 40 – 49 age group (24.53%), 22.64% were between 30 and 39 years old, 15.09% were younger than 30 years. That is to say that the predominant population in this sample is aged 50 - 64 years. That population has already completed their residency and has worked in the hospital for a significant amount of time. Yet, it is young enough to strive for knowledge, improvement and positive change, making them a subject to dissatisfaction in the stagnating healthcare system. The following pie charts and tables show the results of a survey questions to which respondents answered polar questions when asked about different factors contributing to their work satisfaction.

Figure 12 Are you thinking of leaving Croatia to find a new job?



Source: author's work

Figure 12 demonstrates emigration plans of doctors. The predominant answer to the question about plans on leaving the country for better opportunities was negative, at 66.04%. 33.96% are actively thinking of finding a job outside of Croatia. Let us see how age range and gender correspond to the results of this question.

Table 5 Emigration plans by age range

Are you thinking of leaving Croatia to find a new job?	
AGE RANGE	YES
< 30	50.00%
30 - 39	58.33%
40 - 49	34.46%
50 - 64	5.20%
> 64	0.00%

Source: author's work

Table 5 displays emigration plans presented by different age groups. One out of two of doctors aged thirty or below is thinking of moving abroad. That proportion is rising even higher with the next age group, 30-39, with an astounding 58.33%. Doctors aged 40-49 are less prone to leaving Croatian healthcare system at 34.46% while those aged 50-64 stand at 5.20%. Doctors aged 64 and over do not have plans on moving at all. These results are not appalling whatsoever because older individuals have better job positions and better salaries than their younger colleagues. They also have families and established private and business lives. They spent years on building their reputations so it would not make sense for them to want to leave. On the other hand, younger doctors that have finished their residencies are not as established nor highly ranked so they do not have much at stake.

Table 6 Emigration plans by gender

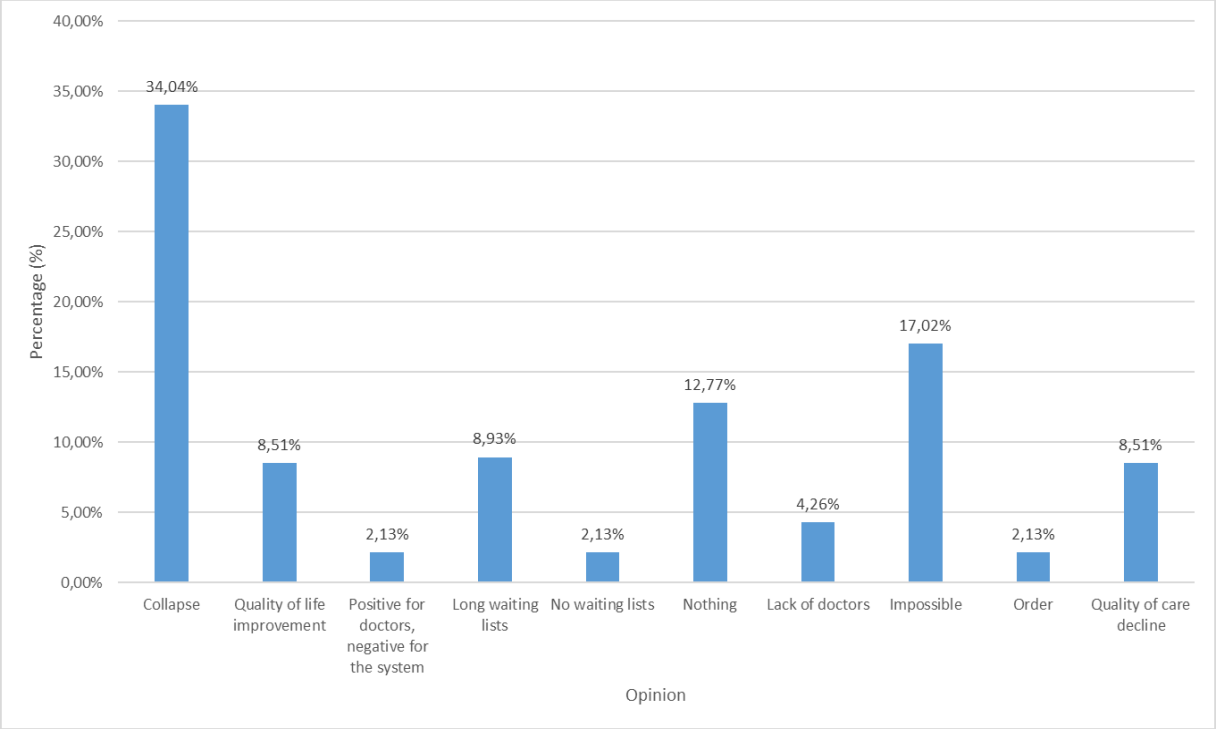
	Are you thinking of leaving Croatia to find a new job?	
Gender	Male	Female
Yes	50%	16%
No	50%	84%

Source: author's work

Table 6 exhibits emigration plans categorized by gender. It is clear that men are more likely to think about leaving Croatia to find a new job. Also younger doctors more often reported that they think about leaving Croatia: in age group 30-39 two out three respondents and in age group < 30 one out of two respondents. This is somewhat expected because many doctors of both genders who filled the survey were actually in those age groups.

Only 20% of women in age groups < 30 and 30-39 are not thinking of leaving Croatia. That disparity could be explained by the nature of genders; men are more adventurous business-wise while women like security. Another reason would be also a sample error i.e. very restricted sample size.

Figure 13 What would happen if doctors worked exclusively during their working hours?



Source: author's work

The last survey question asked the respondents what would happen if doctors worked exclusively during their working hours, forty-seven respondents expressed their opinions. Nearly 34% predict chaos and collapse of the healthcare system. 8.51% of doctors would be happier and their quality of lives would improve. On the other hand, 2.13% think their private lives would improve but it would harm the system. 8.93% foresee longer waiting lists while 2.13% think that there would be no waiting lists. 12.77% insist that nothing would change. 4.26% think that there would be a drastic decrease of doctors and that the system would operate on the pro bono basis. 17.02% think that it is impossible to work within the regulated working hours because of the nature of the job. They gave examples of surgeons and emergency room duty. Only 2.13% thinks that it would provide order while 8.51% state that the quality and availability of healthcare would decline.

Table 7 Salary satisfaction in public and private sectors

Scale	Public sector	Private sector	Combination
1 – strongly disagree	18.42%	0.00%	0.00%
2	36.84%	0.00%	33.33%
3	23.68%	0.00%	16.67%
4	10.53%	55.56%	50.00%
5 – strongly agree	10.53%	44.44%	0.00%

Source: author's work

Table 7 demonstrates salary satisfaction across sectors. Working in both sectors is a rare sight outside of Croatia, however, some doctors work at private hospitals after work or on their days off. Their satisfaction levels are somewhere between those of private and public sectors because they experience both. Private sector clearly pays well since there is not one answer claiming to be dissatisfied. On the other hand, 18.42% of doctors working in the public sector are utterly dissatisfied with their salaries, 36.84% are not satisfied while only 10.53% is completely satisfied. Individuals working solely in the private sector are not on call as much as those working in the public sector. Their overall job satisfaction levels across different elements are higher. This shows that their private lives do not suffer and that they can maintain a desirable work-life balance.

A study conducted by a group of researchers on stress at the workplace with a focus on Zagreb's hospital workers examined stressors using a survey. Nearly, 75% of doctors expressed financial constraints as they do not think they are compensated fairly (Knežević, 2009). Their sample size was 1,477 which is a significant number and proves that there was no sample error in this research seeing that the results are similar.

A deeper dive into the obtained data might yield additional insights on the validity of our findings. We start by observing whether a statistically significant difference between wage satisfaction scores exists among the two genders. On average, women seem to be slightly happier with their wages than men.

Table 8 Wage satisfaction by gender

Gender	mean	mode	N
Female	3	2	25
Male	2.93	3	28
Total	2.96	2	53

Source: author's work, STATA output

This is evident from the table itself: the mean wage satisfaction score for women sits at 3, whereas men display a mean satisfaction score of 2.928571. In order to determine whether this difference is statistically significant we perform a t-test. From the software output p value stands very high at 0.8440. This is significantly above the 0.05 limit, and we therefore fail reject the null hypothesis of the two scores being equal. Phrased differently, no statistically significant difference exists between the two.

Similarly, we want to conclusively measure whether there is a statistically significant difference between men and women when it comes to their work-life (dis-)satisfaction. More precisely, respondents were asked to determine how much they think their personal life suffers due to work-related obligations, on a scale from 1 (no impact) to 5 (significant impact).

Table 9 Dissatisfaction with work-life balance

Gender	mean	mode	N
Female	3.28	4	25
Male	4.07	5	28
Total	3.69	4	53

Source: author's work, STATA output

We can see from the summary results that men are more dissatisfied with their work-life balance, having scored higher than women. To check whether these figures are indeed statistically different, a similar process will be performed as in the previous example. The results of the t-test, unlike in the previous example, prove that there is a statistically significant difference between the two groups at a 5% significance level. Having calculated that, we are now interested in measuring the size of the difference itself. For this purpose, we are going to employ a Cohen's d test. McLeod provides a guideline on how to interpret Cohen's d test: Cohen – according to the author – suggested that d = 0.2 be considered a 'small' effect size, 0.5 represents a 'medium' effect size and

0.8 a 'large' effect size (McLeod, 2019). This means that if two groups' means don't differ by 0.2 standard deviations or more, the difference is trivial, even if it is statistically significant. Our results show that the size of the effect may be classified as “medium” in scope, as d=-0.70444303.

4.3 Conclusions from the survey findings

After analyzing survey findings conclusions about satisfaction levels of Zagreb’s doctors can be made. Almost 34% of doctors are actively thinking about leaving Croatia to find better job related opportunities. The majority of that percentage are young doctors seen as 50% of doctors under thirty and 58.33% of those aged 30-39 plan to emigrate. 77.78% are male which corresponds to their answer about job satisfaction levels.

Doctors working in the public sector exhibit salary dissatisfaction. 18.42% strongly disagree, 36.84% disagree, 23.68% neither agree nor disagree, 10.53% somewhat agree and 10.53% strongly agree with their salary levels. On the other hand, doctors working in the private sector somewhat agree (55.56%) and strongly agree (44.44%) with their salaries proving that they are more satisfied than their colleagues working in the public sector.

Looking at the wage satisfaction scores that reside across the two genders, women tend to be marginally happier with their wages than men on average. That was observed through the mean wage satisfaction scores with woman scoring 3 and men 2.92857. There is no distinction between the two which would be considered statistically significant. That said these outcomes could explain why only 22.22% want to move abroad.

Private life satisfaction results revealed that women are more satisfied with their work-life balance scoring lower than men.

5 Conclusion

Managing the entire healthcare system is not straightforward. It entails regulating all aspects of numerous organizations and different organizational cultures within them. This study has its limitation, nonetheless, it confirms that the Croatian healthcare system requires revision.

Currently, doctors are not working the working hours of doctors are not in accordance with Croatian labor law. That is, doctors have tens or even hundreds of overtime hours within their working hours which is far more than they are allowed to have in a year according to the labor law, and some do not even have a prescribed break between shifts. If the working hours of doctors were harmonized with the labor law, the lack of staff would make it impossible to maintain most health services and the healthcare system would literally collapse. That is to say that the healthcare system rests on overtime hours of doctors who are not in compliance with the labor law.

Due to working in unsatisfactory working conditions doctors are facing burnout. Thus, they lose motivation which subsequently leads to a drop in the quality of healthcare provision. All things considered, it is not unforeseen that Croatian doctors are emigrating.

Burnout can be diminished through prevention and stressor reduction. To put it another way, Human Resources need to educate doctors on prevention methods and their implementations. Such goals can be accomplished by fostering a pleasant environment and, if not changing, improving the organizational culture.

Another key thing to remember is the importance of appropriate performance management and performance appraisal. If used properly, it can be an important tool used to encourage doctors to work at maximum capacities. To that end this study proves that doctors working in Zagreb's public hospitals are not satisfied neither with their salaries nor with the work-life balance their jobs entail.

References

Amoafo, E., Hanbali, N., Patel, A. & Singh, P., 2015. What are the significant factors associated with burnout in doctors?. *Occupational Medicine,* 65(2), pp. 117-121.

Azzopardi-Muscat, N. & England, K., 2017. Demographic trends and public health in Europe. *European Journal of Public Health*, 27(4), pp. 9-13.

Babacanli, A., 2016. Zadovoljstvo mladih liječnika u republici hrvatskoj: idemo li u pravom smjeru?. *Liječniki vjesnik.*

Bidwel, P. et al., 2012. The national and international implications of a decade of doctor migration in the Irish context. *Health Policy,* 110(1), pp. 29-38.

Bojanić, A., 2014. *Stavovi studenata medicine prema radu u inozemstvu i novim poslovnim mogućnostima nakon ulaska u Europsku Uniju.* Zagreb: s.n.

Boland, P., 1996. *Re-designing Healthcare Delivery, A Practical guide to Reengineering, Restructuring and Renewal,* Berkley: Borland Healthcare Delivery.

Craiovan, P., 2013. *Correlations between perfectionism, stress, psychopathological*, Bucharest: s.n.

Croatian Health Insurance Fund, 2020. *Financiranje zdravstvene zaštite.* [Online] Available at: https://www.hzzo.hr/zdravstveni-sustav-rh/financiranje-zdravstvene-zastite/ [Accessed 1 Sepetember 2020].

Eurostat, 2019a. *Hospital beds by hospital ownership.* [Online] Available at: https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hlth_rs_bds2&lang=en [Accessed 3 September 2020].

Eurostat, 2019b. *Nursing and caring professionals.* [Online] Available at: https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do [Accessed 3 September 2020].

Eurostat, 2020a. *Healthcare personnel statistics - physicians.* [Online] Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php/Healthcare_personnel_statistics_-_physicians#Healthcare_personnel [Accessed 8 September 2020].

Eurostat, 2020b. *Healthcare personnel statistics - physicians.* [Online] Available at: https://ec.europa.eu/eurostat/statistics-explained/pdfscache/37382.pdf [Accessed 1 September 2020].

Eurostat, 2020c. *Population on 1 January by age group and sex.* [Online] Available at: https://ec.europa.eu/eurostat/data/database [Accessed 8 September 2020].

Eurostat, 2020d. *Population structure and ageing - Statistics Explained.* [Online] Available at: https://ec.europa.eu/eurostat/statistics-

explained/index.php?title=Population_structure_and_ageing
[Accessed 1 September 2020].

Eurostat, 2020e. *Visualisations - Eurostat.* [Online] Available at: https://ec.europa.eu/eurostat/web/population-demography-migration-projections/visualisations
[Accessed 1 September 2020].

HLK, 2020. *Atlas liječništva - Odlazak u inozemstvo,* s.l.: s.n.

Khatri, N., Wells, J., McKune, J. & Brewer, M., 2006. Strategic Human Resource Management Issues in Hospitals: A Study of a University and a Community Hospital. *Hospital Topics.*

Knežević, B., 2009. Zdravstveni djelatnici u bolnicama i stres na radu: istraživanje u Zagrebu. *Sigurnost,* pp. 85-92.

Kopetsch, T., 2009. The migration of doctors to and from Germany. *Journal of Public Health,* pp. 33-39.

Kopjar, T. et al., 2019. Burnout among Croatian physicians: a cross-sectional national survey. *Croatian Medical Journal.*

Lunenburg, F., 2012. Performance Appraisal: Methods and Rating Errors. *International Journal Of Scholarly Academic Intellectual Diversity,* Volume 14.

Maslach, C. & Leiter, M., 2016. Understanding the burnout experience: recent research and its implications for psychiatry. *World Psychiatry,* pp. 103-111.

Maslach, C., Schaufeli, W. & Leiter, M., 2001. Job Burnout. *Annual Review of Psychology.*

McDermott, A. & Keating, M., 2011. Managing professionals: exploring the role of the hospital HR function. *Journal of Health Organization and Management,* Volume 25, pp. 677-692.

McLeod, S., 2019. *What does effect size tell you.* [Online] Available at: https://www.simplypsychology.org/effect-size.html
[Accessed 8 September 2020].

MEF, 2020. *Call for applications.* [Online] Available at: https://mse.mef.unizg.hr/admission/call-for-applications
[Accessed 6 September 2020].

Murgic, J. et al., 2009. The ageing of Croatian population. *Collegium antropologicum,* pp. 701-705.

OECD, 2017. *Croatia: Country Health Profile 2017, State of Health in the EU.* [Online] Available at: https://ec.europa.eu/health/sites/health/files/state/docs/chp_hr_english.pdf
[Accessed 1 September 2020].

Ožvačić Adžić, Z., 2013. *Is Burnout in Family Physicians in Croatia Related to Interpersonal Quality of Care?,* s.l.: Arhiv za higijenu rada i toksikologiju.

Pines, A. & Aronson, E., 1988. *Career burnout: Causes and cures.* s.l.:Free Press.

Predavec, S., Šogorić, S. & Jurković, D., 2010. *Unaprjeđenje kvalitete zdravstvene usluge u hitnoj medicini u Hrvatsko,* Zagreb: Acta medica Croatica.

Roditis, K., Samara, E. & Louis, K., 2019. A survey to assess job satisfaction among junior doctors in Greece. *Scientific Chronicles,* pp. 72-96.

Sambolec, M. & Železnik, D., 2018. Burnout syndrom among medical professionals working with infectious patient. *Sestrinski glasnik,* pp. 5-9.

Schaufeli, W., Maslach, C. & Marek, T., 1993. *Professional Burnout.* s.l.:Taylor & Francis.

Segouin , C. et al., 2007. Country report: medical education in France. *Medical Education,* 41(3), pp. 295-301.

Selmanović, S., 2012. Faktori loše organizacije rada kao prediktori sindroma izgaranja bolničkih liječnika. *Sigurnost,* pp. 1-9.

Smolić, Š., 2018. *Obilježja i implikacije prekovremenog rada liječnika u Hrvatskoj,* Zagreb: HAZU.

Smolić, Š. & Barić, V., 2012. *Strategija ljudskih resursa u hrvatskom zdravstvu - izazovi ulaska u Europsku uniju,* Zagreb: HAZU.

Smolić, Š., Čipin, I. & Jerić, V., 2017. *Demografski atlas hrvatskog liječništva.* [Online] [Accessed 11 September 2020].

Swami, M., Mathur, D. & Pushp, B., 2013. Emotional intelligence, perceived stress and burnout among resident doctors: An assessment of the relationship. *The national medical journal of India,* Volume 26.

Sweeney, J. T. & Summers, S. L., 2002. The Effect of the Busy Season Workload on Public Accountants' Job Burnout. *Behavioral Research in Accounting,* Volume 14, pp. 223-245.

Taylor, M., 2020. Why is there a shortage of doctors in the UK?. *The Bulletin of the Royal College of Surgeons of England,* 102(3), pp. 78-81.

Worldometer, 2020. *Croatia Population.* [Online] Available at: https://www.worldometers.info/world-population/croatia-population/ [Accessed 8 September 2020].

Zlatanova-Velikova, 2010. The Shortage of Health Workers Globally. *Trakia Journal of Sciences,* Volume 8, pp. 414-417.

List of Figures

List of Tables

Appendix

Satisfaction of doctors in Zagreb hospitals

This survey will be used exclusively for the preparation of a Master thesis at the Faculty of Economics in Zagreb.

Mark your gender: *

Mark only one oval.

- ◯ Male
- ◯ Female

Mark your age range: *

Mark only one oval.

- ◯ <30
- ◯ 30-39
- ◯ 40-49
- ◯ 50-64
- ◯ >64

Do you work in the public or private sector? *

Mark only one oval.

- ◯ Public
- ◯ Private
- ◯ Both

Mark your work place: *

Mark only one oval.

- [ ] General hospital
- [ ] KB/KBC
- [ ] Special hospital
- [ ] Other: _____

My private life suffers because of my working life. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

I am satisfied with my salary. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

My job meets the expectations I had before working. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

I am satisfied with the amount professional training, further training and acquired competencies.*

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

I am satisfied with my job. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

I am satisfied with the amount of free time. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

Do overload errors occur? *

Mark only one oval.

- ◯ Yes
- ◯ No

Are you thinking of leaving Croatia to find a new job? *

Mark only one oval.

- ◯ Yes
- ◯ No

Would any additional education or training make your professional life more attractive and successful? *

Mark only one oval.

- ◯ Yes
- ◯ No

Have you had the opportunity to attend the desired education or training? *

Mark only one oval.

- [ ] Yes
- [ ] No

On average, how much time do you spend with each patient during the examination? *

Mark only one oval.

- [ ] Less than 30 minutes
- [ ] 30 minutes or more

Would waiting lists be shortened if doctor overload was reduced? *

Mark only one oval.

- [ ] Yes
- [ ] No

Do you think increasing the number of doctors would reduce the burden on doctors? *

Mark only one oval.

- [ ] Yes
- [ ] No

Do you think that night shifts affect the vigilance and work of doctors? *

Mark only one oval.

- [ ] Yes
- [ ] No

On average, how many contacts do you have with patients per day - count personal contacts / counseling and contacts, e.g. via e-mail, telephone? *

How many hospital on-call shifts do you perform per month? *

What do you think would happen if doctors in hospitals worked exclusively during working hours?

Curriculum Vitae

Diana Jaklin

Date of birth: 28/09/1995
Nationality: Croatian
Gender: Female
Contact: +385 958176758
E-mail: dijaklin@gmail.com
Address: Kraljevec II. 35, 10000, Zagreb

WORK EXPERIENCE

23/05/2017 – CURRENT – Zagreb, Croatia

Marketing Assistant – ComTel Corp.

10/2018 – 10/2019 – Zagreb, Croatia

Student Assistant - Department of Macroeconomics and Economic Development –

Faculty of Economics and Business, University of Zagreb

EDUCATION AND TRAINING

11/2019 – CURRENT – Trg John F. Kennedy 6, Zagreb, Croatia

Master Degree in Management – Faculty of Economics and Business, University of Zagreb

10/2015 – 07/2019 – Trg John F. Kennedy 6, Zagreb, Croatia

Bachelor Degree in Business – Faculty of Economics and Business, University of Zagreb

02/07/2018 – 22/07/2018 – Via Roberto Sarfatti 25, Milan, Italy

Summer School Certification – Bocconi University Summer School

03/07/2017 – 21/07/2017 – Arklių g. 18, Vilnius, Lithuania

Summer School Certification – ISM Summer University in the Baltics

09/2010 – 06/2014 – Jordanovac ul. 8, Zagreb, Croatia

High School Diploma – XV. Gimnazija International Baccalaureate