SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2019
ORGANIZATION AND MANAGEMENT SERIES NO. 141

FUTURE CHALLENGES TOWARDS SUSTAINABLE HEALTHCARE

Filip PEKAR

Matej Bel University, Faculty of Philosophy, Department of Ethics and Applied Ethics, external postgraduate study; filip.pekar@gmail.com

Abstract: The healthcare sector plays an important role in the economy of most developed countries. Change of demographic pattern, lack of resources, costs, feminisation of medicine, shortage of qualified pesonnel, good quality of life as well as affordable and satisfactory social well-being of employees, non-linear healthcare threats, increasing administrative processes and cybersecurity create serious challenges that need to be addressed in order to provide sustainable future of the healthcare.

Keywords: healthcare, challenge, change.

1. Introduction

Healthcare services are facing a constantly enormous amount of cumulative knowledge, an increasing number of new processes, technologies and devices applied, and along with growing administrative, procedural and legislative chaos within healthcare systems increases the number and importance of ethical issues regarding healthcare. Healthcare professionals are forced to acquire new complex managerial skills and responsibilities in addition to the expected curative ones. Divergence among the pace of research; a progressive decrease in availability of raw material, economical resources and qualified human resources; wide accessibility of healthcare as well as changing demographics create critical challenges for healthcare worldwide, and they will certainly intensify due to unsustainable growth. Macroeconomic factors, such as population ageing, insufficient health care insurance fees or rising costs, have a direct impact on recipients as well as providers of healthcare services. The healthcare sector plays an important role in most developed countries, comparable with any other part (i.e. other industry) of economic cake, having a direct significant impact on social and political environment as well as electoral success. However, rising healthcare costs create constant pressure on healthcare funding, particularly when each innovation automatically means the expenditure growth. Healthcare enterprises were established in a frequently hostile and ever-

changing social, political and economic environment. They need to have comprehensive understanding of social and moral context of illness and health as well as to balance convergence between individual and public interest, reflecting collective value judgements. Sustainable progress and development should be based on universal ethical principles in order to provide better quality of life as well as affordable and acceptable social well-being. The progress is obviously related to (if not dictated by) economic growth, which exposes the issue of healthecare nature. It should be asked whether healthcare is already a commodity, or it is heading towards this point, or it is one of fundamental rights and an absolute necessity of universal character for the sake of legislative and administrative protection for guaranteeing a status of solidarity model to avoid a situation in which few people make a profit and many have health problems. The Universal Declaration of Human Rights (UDHR) includes two different categories of human rights – civil and political rights on the one hand; economic, social and cultural rights on the other. The right to healthcare, treatment, disease control and prevention, as well as social security, constitute part of economic, social and cultural rights. Globalisation, corporatism, combination of economic and political power turn also human rights into an object of trade and commercialisation, as well as they challenge presumed egalitarian principles of distributive justice towards the status not derived from the idea of impartiality. Finding the balance among the right to free access to healthcare, responsibility for expenses, and healthcare sustainability is a truly explicit challenge for the forthcoming future.

2. Methods

Descriptive and analytical methods were used to present the current status and bring up critical evaluation of the available facts and data.

3. Sustainability

More than three decades ago, under chairmanship of the former Prime Minister of Norway – Gro Harlem Brundtland, a comprehensive programme for sustainable development was written and offered as a publication of the World Commission on Environment and Development (WCED, 1987). This report identifies most critical environmental issues, such as: uncontrollable population growth, excessive deforestation and grazing, destruction of tropical forests, species extinction, increased greenhouse effect causing climate change, acid rain, stratospheric ozone depletion, as well as it emphasises the social-economic aspects of economic growth and overconsumption of the resources. Since then, many activities have been presented.

Lately, twenty global Sustainable Development Goals (SDGs) by 2030 – adopted by all nations of the Member States of the United Nations in 2015 (UN Sustainable Development Goals) – were defined. Unfortunately, economy is considered to be a tool to achieve these goals of sustainability, which is largely supported by sustainable development theorists. Financial systems, banks, corporate bodies and political actors should take the full responsibility for their actions causing sustainability to be too difficult to maintain. Easy access to credit leads to individual, national and global overconsumption skyrocketing debt levels. The public and private indebtedness of 44 richest countries reached 235% of GDP in 2017 whereas it was 190% in 2007 (IIF, 2019). It is fueled by quantitative easing (QE) and low rates of loans, resulting in generation of waste and overconsumption, accompanied by ignoring environmental and social impacts of irresponsible economic behaviour. Massive indebtedness and misappropriate use of public bills in the environment of neoliberal structural economic adjustments, along with lack of morality and universal ethics, create difficulty for sustainable development.

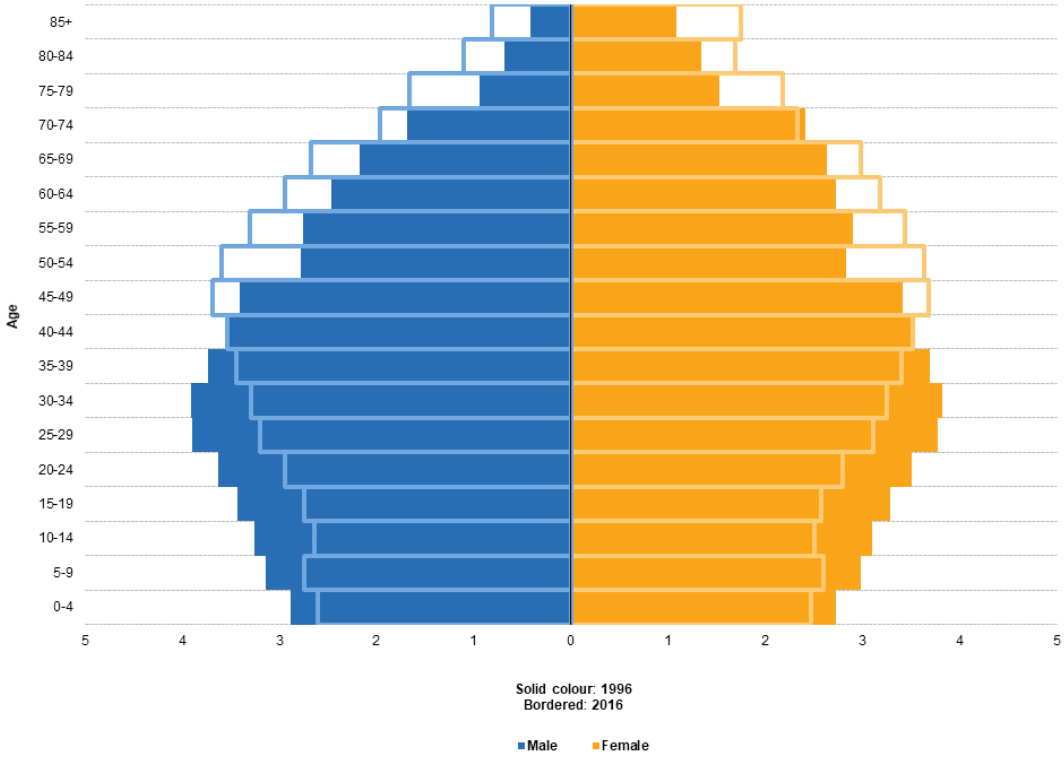
4. Challenges for healthcare sustainability

Healthcare, according to Wikipedia, is the "maintenance or improvement of health via the prevention, diagnosis treatment, recovery, or cure of disease, illness, injury, and other physical and mental impairments in people," and it is "conventionally regarded as an important determinant in promoting the general physical and mental health and well-being of people around the world" (Wiki/Health_care). In the majority of the European countries, healthcare is still, fortunately, based on principles of solidarity and equality. The implementation and penetration of neoliberal principles into the healthcare may direct these values to make a profit from corporate interests instead of accepting health as a universal right based on the principle of social solidarity. Despite quite unpredictable economic and political aspects of the future global development, healthcare services of virtually each country are facing several challenges regarding the future:

1. Change of demographic pattern.
2. Lack of resources; raising costs.
3. Feminisation of medicine.
4. Shortage of qualified pesonnel.
5. Quality of life as well as affordable and acceptable social well-being of employees.
6. Non-linear healthcare threats.
7. Inceresing administrative processes.
8. Cybersecurity.

4.1. Change of demographic pattern

In the last two decades, as it is clearly visible in developed-world economies, there have been considerable changes in the population structure of Europe. Together with Japan, the European Union (EU) has become the world's most rapidly ageing regions, with expected slow population growth or its stagnation within the next 30-40 years, followed by its predicted decline (Eurostat, 2017a). However, population stagnation, or its slow growth, was already observed in the 1960s, 1970s and early 1980s (Eurostat, Statistics Explained a). Demographic change is not only observed regarding quantitative measures. Over the last twenty years, the median age of EU population increased for almost 6 years to achieve 42,6 years in 2016, and proportion of the younger population became lower when compared to people aged over 65 years (Fig. 1).



Note: as of 1 January. 1996: EU-27. 2016: estimates. Break in series.
Source: Eurostat (online data code: demo_pjangroup)

Figure 1. Population structure by age and gender, EU 28 1996-2016. Adapted from: (https://ec.europa.eu/eurostat/statistics-explained/).

Statistically, it seems that Europeans, as well as inhabitants in V4 (Visegrad group) countries live longer and most probably they are healthier, taking into account increasing life expectancy. Medical progress, access to modern diagnostics and treatment methods, as well as perhaps health awareness, may play a role in the shift of the age pyramid. Low fertility rates result in a smaller share of young people in relation to the elderly (Fig. 2).

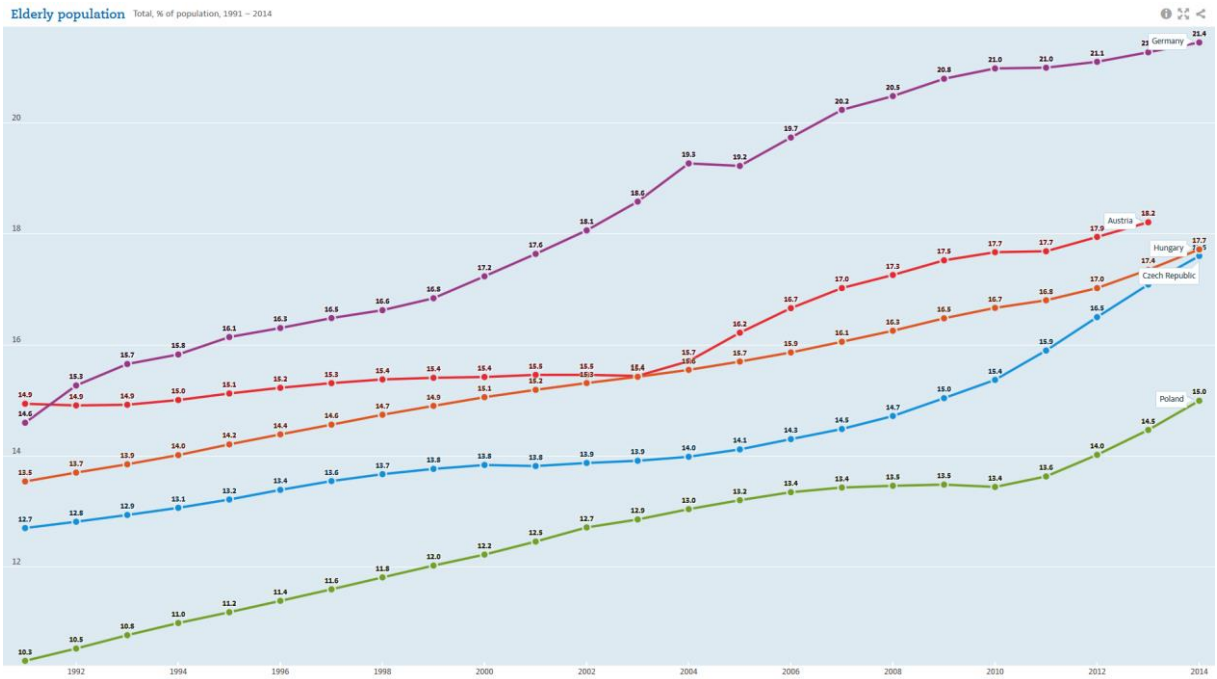


Figure 2. OECD (2019), Elderly population – aged over 65 years (1991-2014). Adapted from: doi: 10.1787/8d805ea1-en.

Industrial automation, computerisation and digitalisation are changing lifestyles, which – together with medicine and healthcare progress as well as economy growth – result in an increase in life expectancy (Fig. 3). Generally, EU population aged 65 years constitutes more than 20% of total population on average, however in Slovakia, Luxembourg and Ireland it is less than 15%. According to Eurostat, for every person aged 65 years there are fewer persons of working age. The old-age dependency ratio was peaked at 34.3 % in Italy (where, in 2016, there were fewer than three persons of working age for every person at the age of 65 years and older), whereas the minimal ratio constituting less than 25% (more than four persons of working age for every person at the age of 65 years and older) is still in Poland, Cyprus, Slovakia, Luxembourg and Ireland. Additionally, Poland is the only EU country that recorded a natural increase in its population, which was exceeded by the negative level of net inward migration (more emigrants than immigrants). The largest population decline was recorded in Romania, however, two-thirds of population reduction was the result of negative net inward migration (Eurostat, 2017b). Structural quantitative and age redistribution of European population raise questions concerning: potential of tax contribution of economically active part of the population, ability for social security payments, medical and healthcare expenses, as well as satisfactory political and economic will and power to offer expenditure on a range of benefits and services that provide adequate support to the elderly.

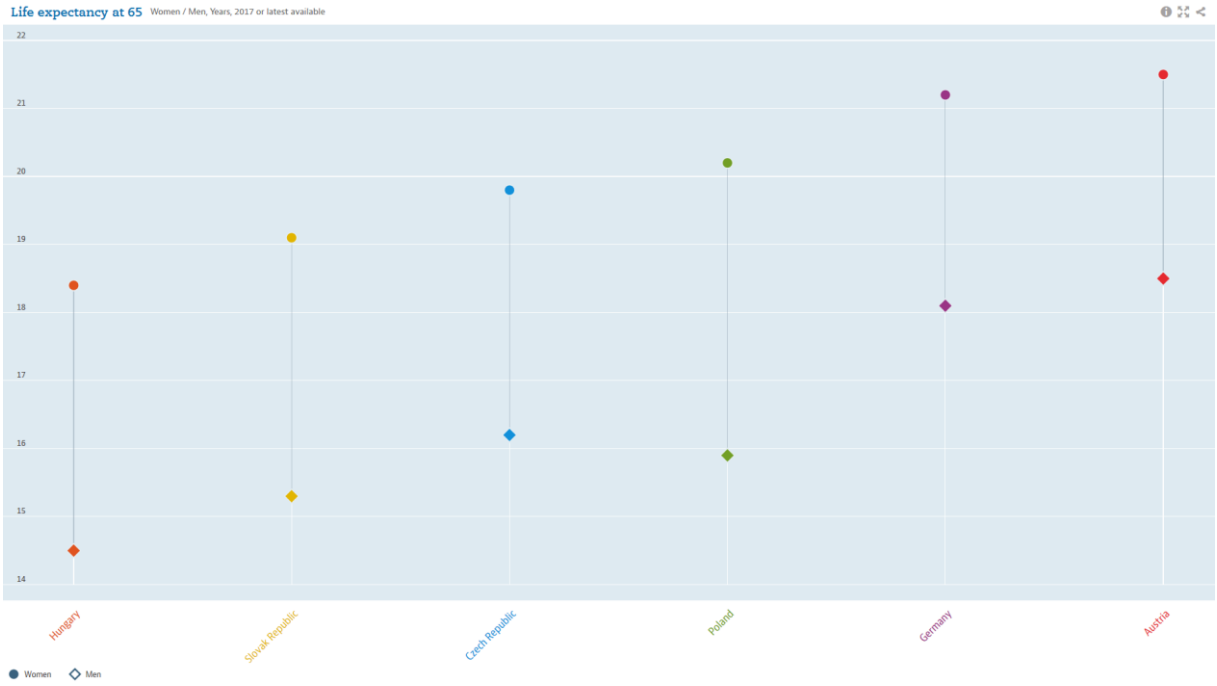


Figure 3. OECD (2019), Life expectancy at age 65 (2014-2017). Adapted from: doi: 10.1787/0e9a3f00-en.

4.2. Lack of resources; raising costs

The healthcare system provides healthcare goods and services to the population in the form of healthcare products. A healthcare product may, depending on its purpose, target multiple needs as considered to be preventive, diagnostic or curative. As defined by OECD, Eurostat and the World Health Organization, "a healthcare product is the result of the interaction of capital, labour and entrepreneurship in the production process which has the primary purpose of improving, maintaining or preventing the deterioration of the health status of persons or mitigating the consequences of ill-health" (OECD, Eurostat, WHO, 2017).

Progress in diagnostics and therapy, the use of modern technologies and tools combined with longer life expectancy and percentage of an aging and sicker population cause that final consumption of healthcare goods and services is progressively strenuous and capital-intensive. Current health expenditure, including personal healthcare (curative, rehabilitative, long-term care, ancillary services and medical goods) and collective services (prevention and public health services as well as health administration), is one of healthcare indicators (Fig. 4).

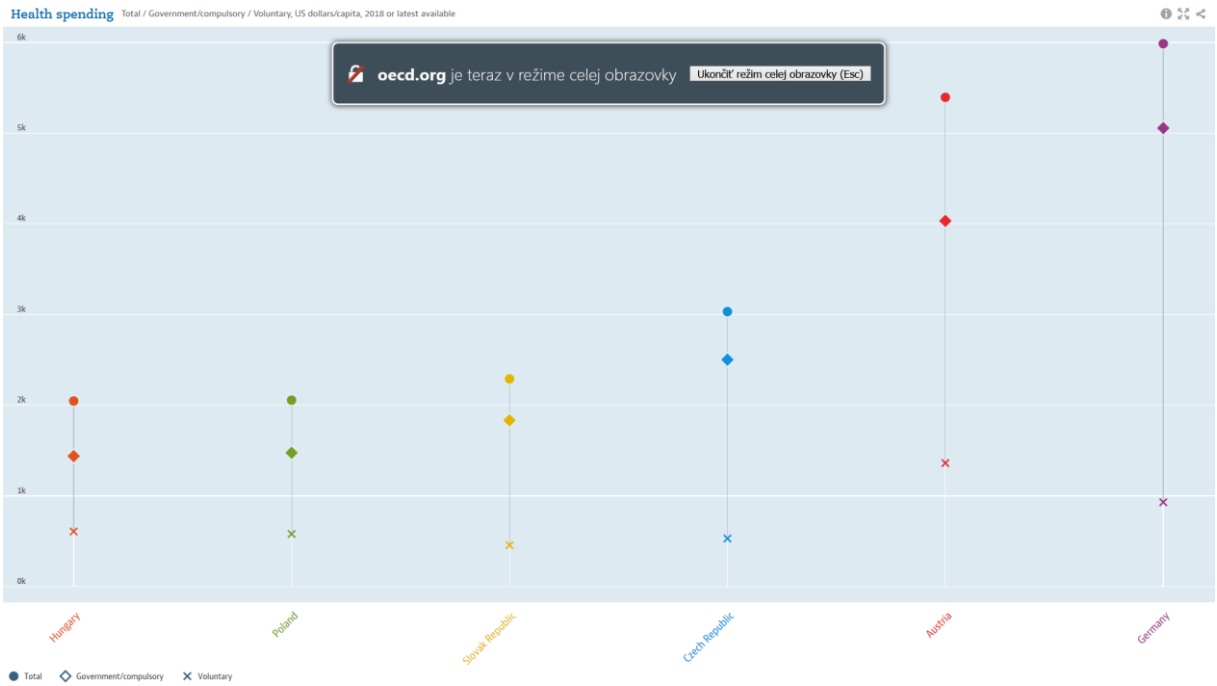


Figure 4. OECD (2019), Health spending (indicator) USD/capita. Adapted from: doi: 10.1787/8643de7e-en.

Maintaing and advancing quality and quantity of the healthcare products depends on satisfactory level of human (workforce, manpower), technical (beds, equipment, technology, facilities) and economic (government, private funds) resources. Principles of health insurance schemes and financing mechanisms are not universal, but country-specific, also in the OECD area. In the Slovak Republic, it is a compulsory social and healthcare insurance scheme managed by a state-owned insurance agency and private insurance enterprises collecting and allocating financial resources. The share of government schemes and compulsory schemes/accounts in total current healthcare expenditure exceeded 80.0% in Germany, Denmark, Sweden, France, the Czech Republic, the Netherlands, Luxembourg and Slovakia (Eurostat. Statistics Explained b). It is obvious that expectations and needs of a population will be always higher than financial and manpower capacity of the healthcare system, and limited resources will never be able to respond symmetrically to these demands. Nevertheless, it is necessary to underline a clear relationship between population health and economic prosperity. This fact needs to be reflected in changes in national health policies, new organisational structures and more complex financing mechanisms, in the context of healthcare sustainability to provide constantly needed monetary and personal resources in order to face challenges for ageing societies and global population growth in an appropriate way.

4.3. Feminisation of medicine

The feminisation of the medical profession is a worldwide phenomenon. Well-qualified female medical personnel play historically a key role in the whole spectrum of healthcare services. Share of female physicians varies depending on a country (Fig. 5). In 2015, averagely

46,5% of physicians across OECD member countries were women. This rising trend challenges the system of healthcare organisation and offers the opportunity to adapt to specific needs of female workforce as well as to take advantage of their increasingly important role. Challenges for systemic and organisational adaptation for growing number of female doctors and nurses are mechanisms for finding the balance between professional and private life. Auxiliary mechanisms to achieve this goal are diversified, e.g. flexible and reasonable working hours, sharing of responsibilities, compressed work schedules, full support regarding giving birth, as well as paid maternity leave. It should be provided especially when there is a decline in the number of births and an increase in the number of women delaying childbirth across EU. Job satisfaction, healthy balance between professional and private life, high social status, acceptance as well as appropriate monetary compensation are main expected goals related to the trend of feminisation in medicine, in compliance with fairness, dignity, equity and rightness.

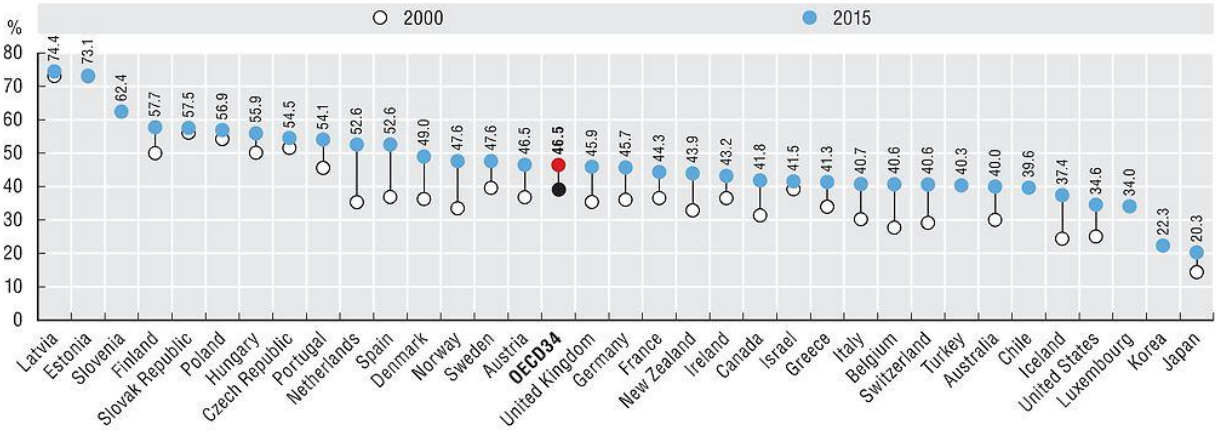


Figure 5. OECD (2017). "Share of female doctors, 2000 and 2015 (or nearest year)" Adapted from: *Health workforce*, OECD Publishing, Paris, https://doi.org/10.1787/health_glance-2017-graph133-en.

4.4. Shortage of qualified personnel

The shortage of qualified personnel worldwide has been a global problem for many years and meets the criteria for crisis. In its 2006 report, the World Health Organization (WHO) estimated the global shortage of almost 4.3 million of physicians, obstetricians, nurses and other healthcare professionals (WHO, 2006). This global problem generates threat to the quality and sustainability of health systems worldwide, and it is concurrent with globalisation and liberalisation of the healthcare markets, enabling a complex migration pattern of healthcare workers from low- to high-income countries. The growth of the world population with longer life expectancy and increased medical care costs, including manpower, means that this phenomenon is even more critical and significant in the global context. Governments across the world are facing these challenges in different manners to have direct impact on a level and structure of healthcare workforce, mainly by recruiting health workers from abroad to fill labour shortages. The Health Professional Mobility in the European Union Study (PROMeTHEUS)

estimates that there are countries (such as Estonia, Slovakia, and Poland) that display a lack of trust towards foreign medical doctors, with a demand ranging from 0.02 to 0.7% of the total workforce. On the other hand, such countries as Switzerland, Slovenia, Ireland and the United Kingdom have turned out to be the European countries with a very high level of trust towards foreign medical doctors, with 22.5-36.8% of their current workforce that has been trained abroad (Wismar et al., 2011). Alleviation of healthcare workforce shortage is a long-term process and its effects may be seen after many years. Therefore, proactive tasks undertaken must be well-defined on the basis of big data analytics, in order to handle dynamics of demand for medical personnel and its allocation. The healthcare system needs to find well-planned and holistically implemented flexible mechanisms for attracting new long-run personnel to avoid deterioration in quality and availability of healthcare services. Otherwise, the shortage of qualified health professionals will remain one of the key challenges for this industry.

4.5. Quality of life, affordable and acceptable social well-being of employees

Quality of life and social well-being of employees are challenging tasks across the whole economy. Shortage of qualified personell, occupational stress as well as optimisations of medical expense reimbursements often create the basis for situation which requires medical workforce to do more in a shorter period of time. The consequence is a high staff turnover, a low level of commitment and low overall satisfaction. In Germany, no other occupational group has more sick leave days than health professionals (4.5%) (DAK, 2014), including the largest amount of burnout-related sick leave days among nurses. Many studies show emotional exhaustion, depersonalisation, and a low sense of personal accomplishment among healthcare workers, which may undermine professional credibility, directly affect quality of services and result in rapid job-rotation (Morovicsova, 2016; Maslach et al. 1996; Spickard et al. 2002; Shanafelt et al. 2009; Laxmi et al. 2019). Occupational burnout seems to have also dire consequences regarding personal life of healthcare workers, e.g. relationship problems, substance abuse, suicidal behaviour (Shanafelt et al. 2003, 2011). Therefore, the aim of effective hospital HR management must be a more sensible use of personnel instead of burdening helthcare workers with working overtime. Other important factors include a healthy work-life balance, good career prospects, and decent salary. As a result, hospital operators now optimise their clinical and administrative processes. They modernize their salary and working time models, improve the promotion of education and scientific research, and create a corporate culture that makes them an employer of choice for scarce professionals (American Hospital Association, Workforce 2015).

Dealing with emotionally difficult situations, decision-making in the environment of life/death or relief/suffering, interpersonal conflicts on daily basis that negatively affect personal and social life – all of this results in difficulties in coping with specific nature of this profession as well as it contributes to a high level of stress in both occupational and private life.

A Norwegian study concerning predictors of job satisfaction among physicians, nurses and auxiliary workers revealed positive assessment of local leadership as the only domain of work that was significant in predicting high quality of life and job satisfaction for all groups (Krogstad et al. 2006). In Boorman Review, a whole system approach along with support of local staff needs; employee engagement at all levels; strong visible leadership; as well as support at senior management and board level, possess the capability to improve personnel's health and well-being (Boorman, 2009).

Furthermore, determinant factors of well-being in each industry, including healthcare, are: systemic environment providing atmosphere of individual value and utility, social security and life dignity without generating sensation of a permanent existential threat.

4.6. Non-linear healthcare threats

According to Collins Dictionary, a linear process means "development in which something changes or progresses straight from one stage to another, and has a starting point and an ending point" (Collins Dictionary). The same source defines a non-linear process as one which does not progress or develop smoothly from one stage to the next in a logical way, but makes sudden changes, or seems to develop in different directions at the same time. Normally, the sequential progress is made under the influence of many different variables, as progress of knowledge and technological implementation affect daily life, together with economic, social and cultural issues. Sometimes, changes are observed in non-linear manners, when sudden unexpected situations occur, whether as a result of some natural phenomena (earthquakes, volcanic eruptions, tsunami etc.), or by economic, political or social disruptions. We should not forget about "black swan theory" either, which is a metaphor describing extremely rare, unthinkable and unpredictable event occurrence generating profound changes, and having an enormous impact magnitude on after effects (Taleb, 2007). The possibility of such an event to occur lies also in individual and collective blindness ignoring retrospectively obvious facts and chain of decisions, actions and events cumulating, often before our very (blinded) eyes, into "the black swan" phenomenon. Having this in mind, we should be cautious about making predictions about future healthcare and economic sustainability. Cumulation of social inequalities, unemployment, lack of education, limitation of natural and energy resources, climate change – all that can bring up non-linear threats into society. Migration is nowadays still a wedge issue worldwide, with eminent potential for non-linear threat for the future of healthcare systems in developed countries of destination. Not only because of different traditional models of social interaction and various educational stages, but predominantly due to the absence of medical check-ups and almost certain presence of viruses, parasites and bacterial strains defined as exotic, dangerous and difficult to diagnose and treat. The main risk lies in epidemiological threat related to the most widely prevalent diseases in Africa and Middle East, but also in former Soviet Union countries. Overlooking and underestimating these risks and long-term effects, as well as the absence of profound expert discussion, put domestic populations not only in

health risks, but also create tremendous extra burdens on national healthcare and social budgets. Moreover, concealed capability for non-linear development in national healthcare systems affect economical and social (in)stability and (un)sustainability.

4.7. Increasing administrative processes

Healthcare administration involves many processes on each level of management, including self-management in various decision-making environment. The processes involved are of different nature, e.g. medical, technical, administrative and legal. There are different models of administration for both private and public sectors. Healthcare services in Europe are predominantly public, state-owned, based on solidarity model, which implies the trust in public administration, where an official is accountable and assigned to work for the benefit of a third party beneficiary, with a focus on legality, transparency and impartiality, as well as with aim to improve the overall organisational performance. The effective leadership in healthcare organisations is linked to superior patient care outcomes (Tsai et al., 2015). Despite historical tradition in different countries, the need for greater flexibility as well as appropriate and effective big data management is nowadays necessary for healthcare administration. The proper balance between standardisation and customisation of the processes constitutes permanent challenge in healthcare industry.

4.8. Cybersecurity

Digitalisation of healthcare practices "A-Z" has become common phenomenon worldwide, together with with development of administrative and paperwork processes, creating permanent burden for healthcare workforce, thus another area of tension to handle. Most countries collect, or they have an intention to collect, highly sensitive patient data. The electronic health records are gathered on centralised servers with no prerequisite for being localised within the domestic country, and access of administrators is clearly defined by legal regulations. Nevertheless, none of the regulations prevented attempts to access databases around the world, and highly sensitive data concerning health and illness may become a titbit for many information seekers. The motivations and intentions to achieve such data vary – from procurement of a specific drug through identity theft to other fraudulent acts. For instance, in 2017, the US medical and healthcare sector experienced over 350 data breaches, exposing 4.93 million of patient records. (Cyberattack, 2017).

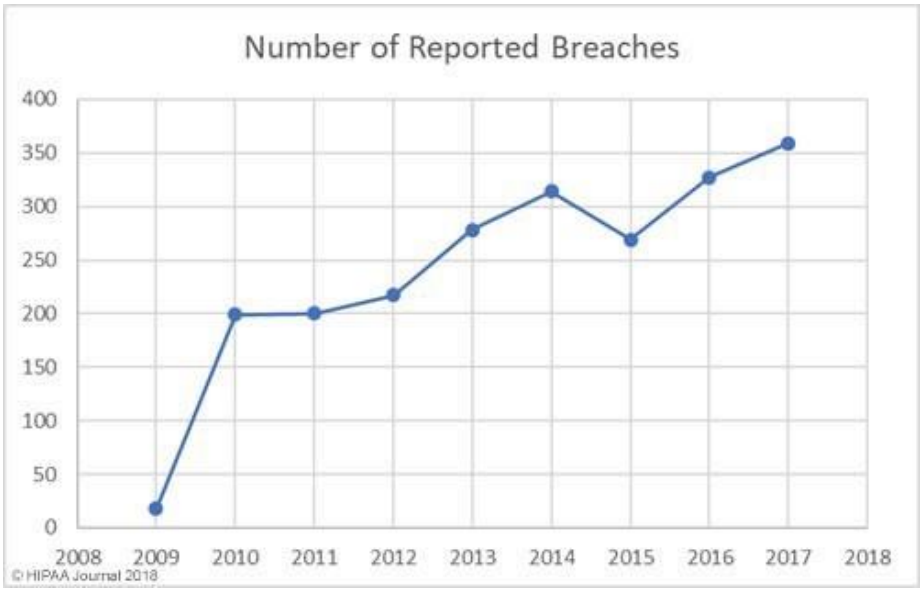


Figure 6. United States Healthcare data breaches (2009-2017). Adapted from: https://www.hipaajournal.com/healthcare-data-breach-statistics/.

The most crucial point regarding the electronic health data collection is keeping these data private and secure them at all costs, otherwise paper documentation kept in a locked shelf in the hospital will provide much higher level of privacy and security storage. Restrictive government regulatory policies on data privacy and security, together with mechanism of automatic systemic data anonymization, may form the health data that are less attractive to cyberattack. Securing products and systems has already become a priority in health data collection with necessity of dedicated resources, and it will constitute permanent challenge for increasingly digital world, potentially aiming into peculiarity.

5. Discussion

The healthcare sector plays an important role in the economy of most developed countries, with its direct and significant impact on social and political environment. The healthcare organisations have become enterprises with the necessity of comprehensive understanding of social and moral context for illness and health, as well as of obligation to balance convergence between individual and public interest, reflecting collective value judgements. It is generally expected that sustainable progress and development of healthcare will be based on pursuit of better quality of life as well as affordable and acceptable social well-being, in close connection with the status of global economy. Finding the balance among the right to free access to healthcare, responsible expenses, and healthcare sustainability is truly explicit challenge for the forthcoming future. Identification of current and expected threats and challenges may take procative actions (i.e. organisation, administration and planning) against impending disaster of

healthcare services worldwide. Handling the challenges is an obligation to guarantee the quality of healthcare and satisfaction for all engaged participants.

6. Conclusion

Handling the challenges regarding the healthcare delivery system as well as guaranteeing the quality of care are fundamental for establishing a collaborative environment with the involvement of political, social, economic and technological capabilities in order to develop strategies that enable to overcome the challenges as they arise. Engagement in research, development and assessment create the best approach and healthcare system reflecting the needs of clients and workforce. Frequent evaluation of models and methodologies should help with the management of evolving challenges, focusing on providing appropriate and effective services as well as reasonable and fair, moral and financial achievement of delivery performance. The reliability, commitment and trust are the key components that enhance a conclusive outcome.

References

1. *A System of Health Accounts 2011. Revised edition* (2017). Paris: OECD, Eurostat and World Health Organization, OECD Publishing, http://dx.doi.org/10.1787/9789264270985-en.
2. Boorman, S. (2009). *The Final Report of the independent NHS Health and Well-being review*. London: TSO, Department of Health.
3. Collins Dictionary. Available at: https://www.collinsdictionary.com/us/dictionary/english/linear.
4. Collins Dictionary. Available at: https://www.collinsdictionary.com/dictionary/english/non-linear.
5. Cyberattacks (2017). Available at https://www.beckershospitalreview.com/cybersecurity/11-of-the-biggest-healthcare-cyberattacks-of-2017.html.
6. DAK (2014). Available at https://de.statista.com/statistik/daten/studie/150266/umfrage/krankenstandswerte-nach-wirtschaftsgruppen/; www.statista.com, Krankenstandswerte nach Wirtschaftsgruppen.
7. Eurostat (2017a). *People in the EU: who are we and how do we live?* Available at https://ec.europa.eu/eurostat/statisticsexplained/index.php?title=People_in_the_EU_%E2%80%93_who_are_we_and_how_do_we_live%3F.

8. Eurostat (2017b). *People in the EU: who are we and how do we live?* Available at https://ec.europa.eu/eurostat/statistics-explained/index.php?title=People_in_the_EU_-_statistics_on_demographic_changes#EU_population_structure_and_historical_development.
9. Eurostat. *Statistics Explained a. Glossary: Population growth*. Available at https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Population_growth.
10. Eurostat. *Statistics Explained b. Healthcare expenditure statistics*. Available at https://ec.europa.eu/eurostat/statisticsexplained/index.php/Healthcare_expenditure_statistics#Developments_over_time.
11. IIF. Available at https://www.iif.com/.
12. Krogstad, U, Hofoss, D, Veenstra, M, Hjortdahl, P. (2006). Predictors of job satisfaction among doctors, nurses and auxiliaries in Norwegian hospitals: Relevance for micro unit culture. *Hum Resour Health, 4,* 3.
13. Laxmi, S.M. et al. (2019). Burnout and Career Satisfaction Among U.S. Cardiologists. *Journal of the American College of Cardiology, 73(25),* 3345-3348; DOI: 10.1016/j.jacc.2019.04.031.
14. Maslach, C., Jackson, S.E., and Leiter, M.P. (1996). *Maslach burnout inventory manual*. Consulting Psychologists Press, Palo Alto, Calif (577 College Ave., Palo Alto 94306).
15. Morovicsova, E. (2016). Syndróm vyhorenia a možnosti jeho prevencie. *Psychiatr. Prax, 17(4),* 153-156.
16. Shanafelt, T.D., Balch, C.M., Bechamps, G.J., Russell, T., Dyrbye, L., Satele, D. et al. (2009). Burnout and career satisfaction among American surgeons. *Ann Surg, 250,* 463-71.
17. Shanafelt, T.D., Balch, C.M., Dyrbye, L., Bechamps, G., Russell, T., Satele, D. et al. (2011). Special report: Suicidal ideation among American surgeons. *Arch Surg, 146,* 54-62.
18. Shanafelt, T.D., Sloan, J.A., Habermann, T.M. (2003). The well-being of physicians. *Am J Med, 114,* 513-9.
19. Spickard, A. Jr, Gabbe, S.G., Christensen, J.F. (2002). Mid-career burnout in generalist and specialist physicians. *JAMA, 288,* 1447-50.
20. Taleb, N.N. (2007). *The Black Swan: The Impact of the Highly Improbable*. Random House, ISBN 978-1400063512.
21. *The world health report 2006 – working together for health* (2006). Geneva, Switzerland: World Health Organization.
22. Tsai, T.C., Jha, A.K., Gawande, A.A., Huckman, R.S., Bloom, N., Sadun, R. (2015). Hospital board and management practices are strongly related to hospital performance on clinical quality metrics. *Health Aff (Millwood), 34(8),* 1304-1311. doi:https://doi.org/10.1377/hlthaff, 2014, 1282.
23. *UN Declaration*. Available at http://www.un.org/en/universal-declaration-human-rights/.

24. *UN Sustainable Development*. Available at http://www.un.org/sustainabledevelopment/sustainable-development-goals/.
25. WCED (1987). *Our Common Future*. World Commission on Environment and Development. Oxford, New York: Oxford University Press, 400.
26. *Wiki/Healthcare.* Available at https://en.wikipedia.org/wiki/Health_care.
27. Wismar, M., Maier, C., Glinos, I., Bremner, J., Dussault, G., Figueras, J., Wismar, M., Maier, C.B., Glinos, I.A., Dussault, G., Figueras, J. (2011). *Health professional mobility and health systems in Europe: an introduction*. *Health professional mobility and health systems: evidence from 17 European countries.* Brussels: European Observatory on Health Systems and Policies.
28. *Workforce 2015 – Strategy Trumps Shortage*. American Hospital Association. Available at https://www.calhospital.org/sites/main/files/file-attachments/Workforce_2015_-_Strategy_Trumps_Shortage.pdf.