

CURRENT USE OF HEALTH CARE SERVICES AND THE POTENTIAL OF E-HEALTH

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BACKGROUND AND MAIN AIM OF THE POSTER

As a result of the spread of coronavirus disease and associated epidemiological measures, social interactions and face-to-face meetings have been considerably limited for more than a year. Despite the negative impacts of the epidemic, this situation has led to a significant increase in impersonal communication and new opportunities for the digital world in numerous aspects of human interactions, including health care. Although electronic processes and communication have been also implemented in the health care system several years before the COVID-19 pandemic, the potential of the use of e-health has been only partially realized. It is assumed that the current situation could accelerate the transition to the approach of e-health, especially the outpatient health services.

This poster illustrates the use of health care before the coronavirus disease pandemic, during the years 2012–2019, in the case of outpatient diabetology in Czechia. Subsequently, it is an attempt to present the theoretical possibilities and reflection of higher involvement of e-health and its positive and negative aspects.

DATA

The outpatient diabetology was chosen as the example of outpatient care of health services which has a large potential for e-health. We mainly focused on the amount and structure of reported medical performance and patients using health services in outpatient diabetology.

Data for this type of analysis are not commonly available, however, we managed to obtain the anonymized data from the largest health insurance company in Czechia, General Health Insurance Company (GHIC CR)¹. Due to the fact that around 60% of people with health insurance in the Czechia have been insured with GHIC CR it is possible to perceive this group as a sufficiently large and representative sample of the population for the generalization of results.

RESULTS

The most patients using diabetology healthcare services (almost 60%) were **patients ages 60 to 79 years**. Between 2012 and 2019, there was a significant shift to the older age groups which is associated with population ageing. The median age is higher for women (69 years in 2012 and 71 years in 2019) than men (65 years in 2012 and 68 years in 2019), despite the considerable amount of female patients at the age from 25 to 39 years which is chiefly related to gestational diabetes during pregnancy.

The number of patients oscillates around 366 to 372 thousand patients per year. In almost all cases, it contains information about sex and age of patient. Moreover, 3.41% patients were the missing information in 2012, it was only 0.05% patients in 2019. It can have an influence on age and sex differences in picture 1.

It was found that the total number of **medical performances** was increasing in total during 2012–2019. The most often reported medical performances were the targeted examination and the targeted education which represented almost half of medical performances and the number of these performances increased during the studied time. Furthermore, the amount of the blood glucose measurement by glucometer, the determination of glycated hemoglobin (HbA1c), and the chemical examination of urine substantially grew up. On the other hand, the number of the control examination and the capillary blood testing declined. Telephone consultations were reported in 2–3% of medical performances in long term.

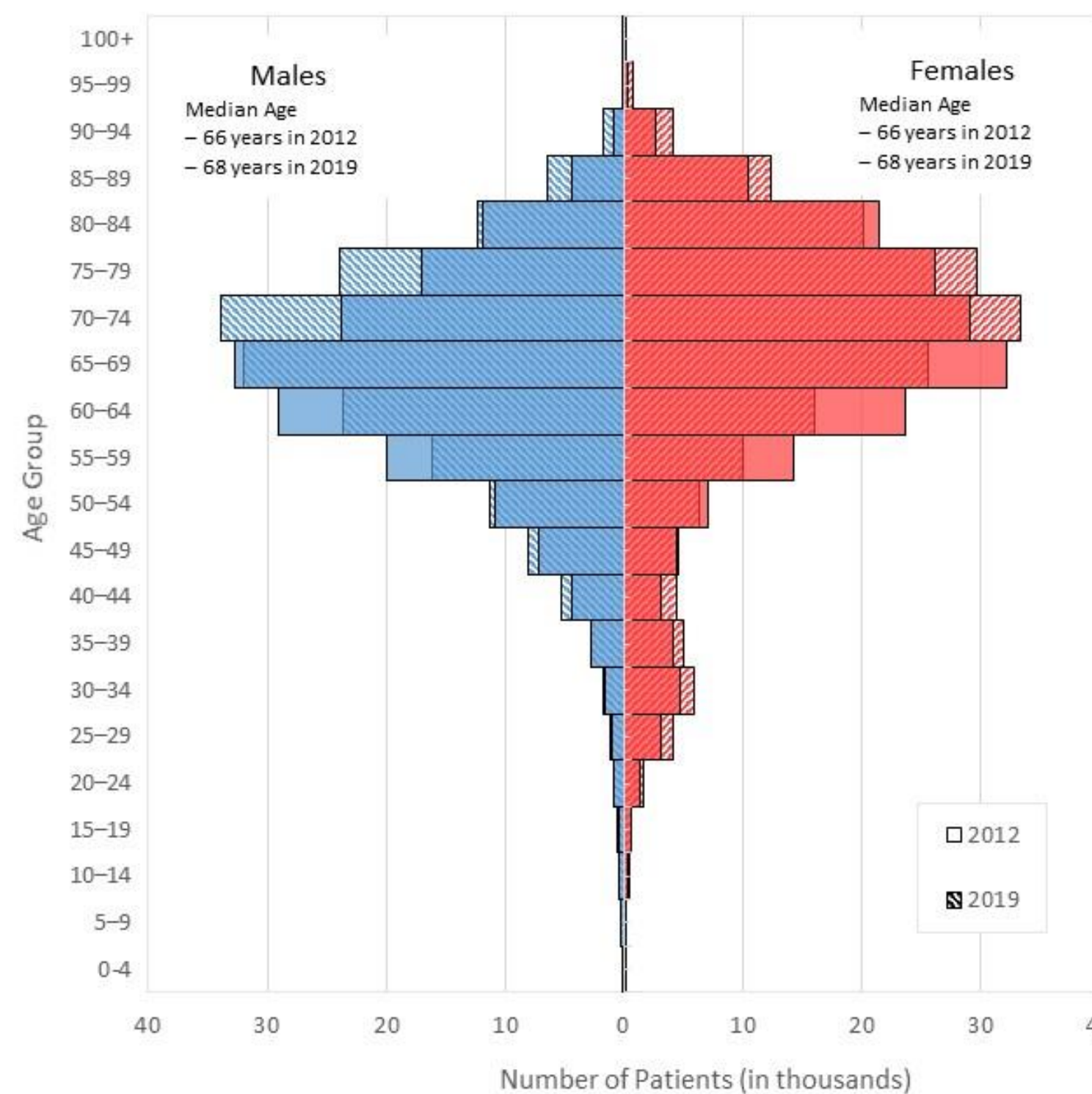


Figure 1 – Structure of patients by sex and age group, Czechia, 2012 and 2019

	2012	2013	2014	2015	2016	2017	2018	2019
Males	45,51	45,87	46,29	46,73	47,00	47,33	49,22	49,51
Females	51,09	50,72	50,46	50,01	49,67	49,43	50,69	50,44
Unknown	3,41	3,42	3,25	3,26	3,33	3,24	0,09	0,05
Total	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
	371 963	368 843	366 419	366 704	367 688	367 789	368 388	367 994

Table 1 – Proportion of patients by sex and the number of patients in total, Czechia, 2012–2019

E-HEALTH DEFINITION

*E-health is a broad term for the diverse, evolving digital resources and practices that support health and healthcare, with the Internet and its applications at its core*², p. 333.

There are many various definitions of e-health which usually encompass a range of services or systems, such as:³

- electronic health records
- computerized physician order entry
- clinical decision support
- virtual health care teams
- ePrescribing
- mHealth / m-health
- telemedicine
- consumer health informatics
- health knowledge management
- health care information systems

DISCUSSION AND REFLECTION

Diabetologist specializes in the prevention, diagnosis and treatment of diabetes mellitus and any complications associated with this disease. In Czechia, the basis of the appropriate treatment of diabetic patients is the cooperation of general practitioners with specialists and between specialists themselves. The diagnosis of diabetes is usually made by a general practitioner, who can initiate the treatment. In case of ambiguity, unsatisfactory outcomes or health complications, the patient is sent for consultation or dispensary to a diabetologist. An uncomplicated patient with good diabetes compensation can be devolved on a general practitioner⁴. As a result, the patients in care of diabetologist should be mainly **chronic patients** with advanced form of the disease who need regular examinations.

According to results, the number of blood testing and chemical examinations, just as targeted examination and education, mostly grown up. It can help doctors to evaluate clinical status and adjust treatment quicker and more accurate than without them. These examinations could be eventually supplemented, maybe replaced in the future, by **self-monitoring**. In the concept of eHealth, many mobile apps were created for monitoring health of user and they become more and more popular. For example, real-time continuous glucose monitoring and intermittently scanned flash glucose monitoring are often used as alternatives and complement to self-monitoring of blood glucose for making decisions about diabetes treatment⁵.

Although, many studies^{6,7,8} confirm that active patient **involvement in treatment decision making** has positive effect on relationship between patients and doctors, patient knowledge and satisfaction, such as health outcomes and healthcare provision costs.

On the other hand, methods of patient involvement and self-management as well as whole e-health tools should correspond with needs and ability of both doctors and patients. Most patients with diabetes, such as most non-communicable diseases, are primarily observed for advancing age which encounter **personal skills, approach, and willingness** to use e-health tools. According to several studies^{9,10,11}, many elderly patients are not very delighted to use electronic information and communications technology tools in their healthcare. It seems that not only targeted technology but also eHealth literacy and positive motivation is needed.

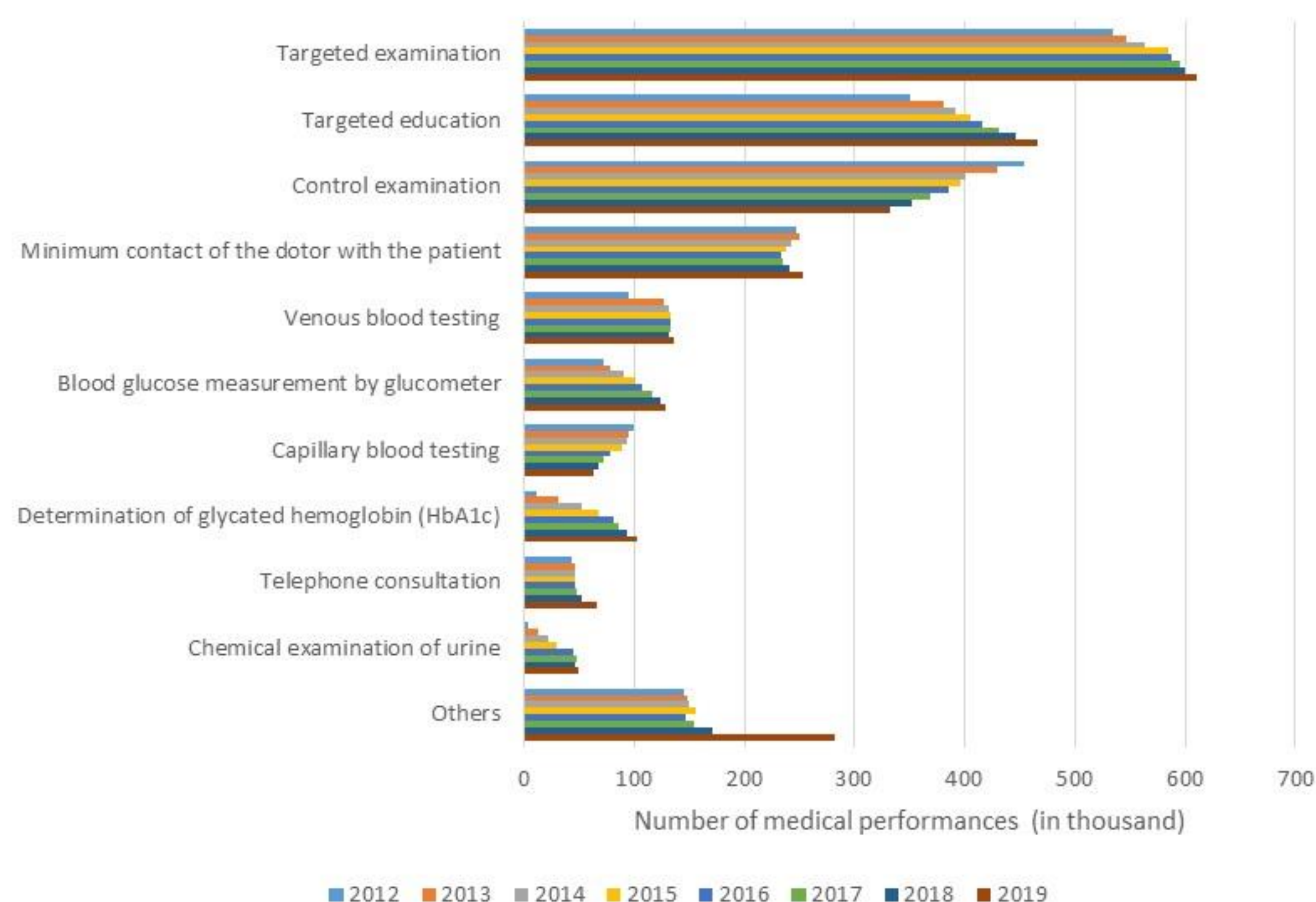
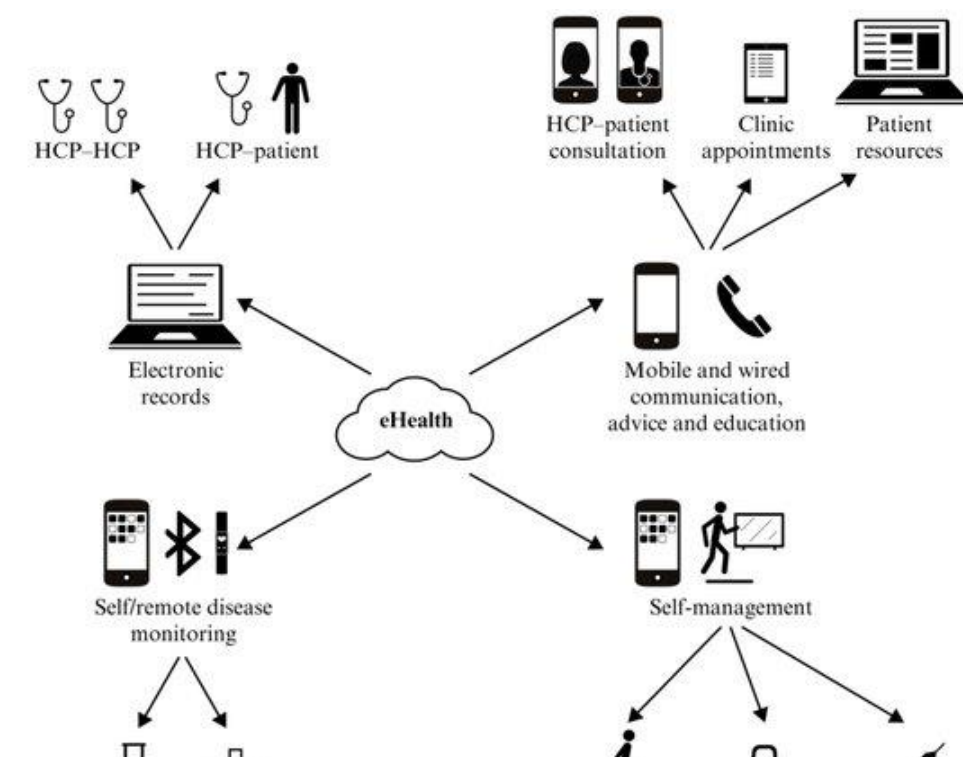


Figure 2 – Structure of reported medical performance, Czechia, 2012–2019

SOURCES

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