

# Human Resource Planning in Health Care: Outlining a Basic Model and Related Complexities

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**Abstract.** The effectiveness of the health care system is largely dependent on the knowledge, skills, and motivation of health care workers, which was particularly evident during the COVID-19 pandemic. The systemic planning of human resources is therefore an important condition for ensuring the sustainability and efficiency of the health care system. This article focuses on outlining a basic model of human resource planning in health care and the investigation of related complexities. An in-depth analysis framework based on various materials and evidence is proposed in order to outline the factors that influence human resource planning in health care. In order to achieve greater credibility of the research results, the in-depth analytical process employs an extensive review of the literature and carries out an investigation of numerous sources and materials, in both the national and international contexts. The purpose of the human resource planning initiatives in health care is to calculate the needed number of health care workers in the future, on the basis of past and current data, and based on assumptions about future trends in supply and demand. The research findings reveal that this is a very challenging task, as there are typically many unknowns in future planning, and, in addition, planners often face a lack of reliable data and systemic deficiencies. Moreover, the study indicates that unplanned and delayed solutions concerning the human resource needs in health care can only alleviate problems, but in no way can they replace effective strategic measures and timely structural changes within the health care ecosystem.

**Keywords.** Human resource planning, health care, basic model, complexities.

## Introduction

The health care sector constitutes one of the most significant branches in the EU economy with important employment potential due to the ageing population and increasing demand for health care services [1]. The current global health crisis and the problems of health care systems around the world due to the COVID-19 pandemic only confirm the important socio-economic role of health care systems [2, 3]. In Slovenia, health care generated 7.9% of GDP in 2020 and employed 6.8% of the active population [4]. According to the National Institute of Public Health, the health care sector employed 60,862 people in 2020 [5]. The provision of health care requires the combination and

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coordination of numerous resources, whereas human resources make the largest contribution to the delivery of health care services in the first place [6].

Due to the ageing population, the population of the EU aged 65 and over is projected to increase by 66.9 million by 2060 [7]. The introduction of new technologies requires additional health care workers and proper training. On the other hand, new health risks are emerging due to lifestyle changes, pollution, and epidemiological threats [8]. All of this is leading to continually increasing the number of health care workers and spending on health care, and poses serious concerns for the sustainability of health care systems in many countries. Policymakers and health care system managers face numerous difficulties in the course of human resource planning in health care. To this end, the main purpose of human resource planning models is to calculate the future number of health care workers needed based on past and current data and on the basis of the assumptions regarding the future trends in workforce supply and demand. Accordingly, this article focuses on outlining a basic model of human resource planning in health care and the investigation of related complexities.

## 1. Methods

In order to achieve the research objectives, this article employs an in-depth analysis methodological framework. Outlining a basic model of human resource planning in health care requires multilateral and detailed insight that delves beyond the superficial layers to investigate the related complexities. Since this study is largely exploratory in nature, quantitative research methods could not yield dependable results. The selection of the methodological approach was adapted to the particularities of the research matter and the availability of evidence [9].

The in-depth analysis was conducted from November 2021 to May 2022. During that time, we carried out extensive document analysis through the exhaustive investigation of primary and secondary sources, policy papers, EU and national strategies, project reports, interviews, and other materials containing subjects related to human resource planning in health care. The in-depth analytical process used content from both national and international contexts to attain greater credibility of the research results [10]. In this sense, the evidence from the field, statistical data, and records from the national health care databases were particularly important. An all-encompassing methodological approach should ensure the greater consistency of the research results and provide a more applicable platform for drawing sensible conclusions [11].

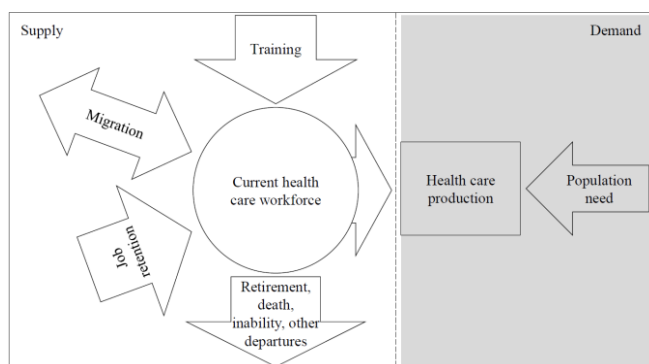
## 2. Results

The in-depth analysis revealed that the following factors have the most significant impact on health care workforce planning [2, 6, 7, 12]: the demographic trends, numerous diseases and chronic conditions, the ageing and gender structure of the health care workforce, the capacity of the educational institutions, the required new knowledge and technologies. The basic model of human resource planning in health care presented in Figure 1 incorporates seven factors in two categories [13]: “Supply” and “Demand”.

On the supply side, “*Training*” denotes the highly significant factor concerning the number of new health care professionals produced each year by the education system [6]. “*Current health care workforce*” refers to the health care workers working in the public

health care system and external health care professionals. The relevance of “*Migration*” varies depending on the weight of this social phenomenon in each country. In any case, as the EU Member States become more integrated and the importation of health care workforce from the third countries continues to rise, the effect of migration is likely to expand [7]. “*Retirement*” is determined by individual choices and regulations governing the right to retire. Other groups within this category, i.e. death, inability, other departures, have a large impact on the number of health care workers and reflect the movements of workers in the field [12]. “*Job retention*” addresses the parameters and occupations (e.g. nurses) in the health care system that may be more closely tied to job retention than others [5]. Factors on the supply side and related complexities are largely the result of the national strategic orientations, development goals, and underlying policy decisions.

Regarding the demand side, there are various research studies that consider a variety of factors influencing the demand for health care services [14]. “*Population need*” refers to the demand based on the population’s underlying needs, where the number and competences of health care workers meet the health-related objectives, such as ensuring better health, reducing inequalities, and the accessibility of the health care system. “*Health care production*”, expresses the ratio between the total current health care spending and the number of health care workers [12]. The demand side can be influenced by the prioritization of health care issues, prevention campaigns, etc. Unlike the supply side, the demand side factors and related dimensions are relatively more difficult to measure and, consequently, to predict.



**Figure 1.** The basic model of human resource planning in health care.

### 3. Discussion

The challenges related to human resource planning in health care stem from complex national and global social factors, multifaceted professional interactions, and specific health care sector dynamics [7]. Our basic model of human resource planning in health care comprises critical factors, a suitable set of data, various assumptions and scenarios, and algorithms for calculating results. Such models typically combine quantitative and qualitative prediction methods and advanced digital solutions. The information used to define the baseline state and the data used to calculate future health care workforce supply and demand trends serves as the basis for measures regarding the training, education, employment, and migration of health care workers, ensuring favorable working conditions for young and older workers and preventing them from moving into

other professions early or retiring. Generally, the models of human resource planning in health care and the derived indicators should enable recognition of the main imbalances within the health care workforce, the analysis of these imbalances concerning all relevant factors, and the identification of potential solutions. Preferably, the results of the modeling should facilitate the assessment of future health care workforce supply and demand, expressed in the indicators defined during the planning process. However, due to various limitations and long prediction periods, such models do not represent a magic solution, and should not be unreasonably imposed on all health care systems without regard for their innate circumstances [15]. The identification of the most important facilitators of the effective human resource planning initiatives in health care and the exploration of their implications should be addressed in future research in this area.

#### 4. Conclusions

The compelling experience from the Covid-19 pandemic has further fueled the heated debates about human resource planning in health care. All such initiatives require well-coordinated action of the stakeholders, efficient digital infrastructure, a sufficient number of competent experts, and, certainly, a suitable normative framework and sufficient funding. Without a wide-ranging approach, such failed projects can lead to long-lasting setbacks, which could seriously threaten patients' access to health care services and undermine all efforts to achieve public health goals in the country.

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