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Health Care Architectural and Urban Planning Systems in the United States of America and France

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Abstract*: *The article deals with the peculiarities of the organization of the architectural and urban health system along with its financing approach in such a world leading country as the United States of America and France. The features of organization of architectural and urban planning network of medical facilities of a state and private levels of subordination are analyzed in the study. The levels of health care service and its share in the overall provision of medical services to the countries' population are analyzed. The total number of treatment and prevention facilities across the states is identified. Particular attention is paid to determining the location of a pediatric network of medical institutions in the American and French architectural and urban health systems.

Keywords*: *architecture, urban planning, system, medical facilities, health care facilities network.

I. INTRODUCTION

The basis of national health policy in the majority of countries is the legal framework developed in accordance with international norms and standards set out in the legal acts of the United Nations, the Council of Europe, the World Health Organization, the International Labor Organization. The model of the state health care management resembles on the socio-economic policy that is proclaimed in the country [1], [2]. Despite the variety of types of organization of the health care system, the specifics of its economic relations, several parameters that reflect its main economic characteristics may be distinguished: property status; sources of financing; stimulating mechanisms of health care professionals and residents [3], [4]. The sources and ways of financing the health care industry determines and influences its architectural and urban planning system [5], [6]. However, in each country, the health financing model has been created for many years and depended on vide range of factors. This is exactly the reason why there is practically no state with a "clear" form of financing the medical industry system, which is constantly being improved, developed and reformed. The world's leading countries health care organization forms research might be helpful in attempting to reform and rethink the healthcare industry in countries with poorly developed medicine that needs to be updated and reorganized on both architectural and urban levels [7], [8].

II. MATERIALS AND METHODS

The research is mainly composed of a systematic and comprehensive analysis of the medical network and hospital complexes of the leading countries all over the world. An analysis of literature, normative, information sources, graph-analytical methods, photographic fixation, and field examination were used in the study [9], [10].

The fundamental surveys in the field of architecture history and urban planning served as the scientific and methodological basis of the current study: A. Ikonnikov, S. Khan-Magomedov, O. Orelska, I. Vysochina, M. Votinova. Theoretical and practical issues of urban planning analysis were considered in the researches of K. Lynch, O. Gutnov, S. Glazichev. Y. Surmin and G. Lavryk studied the system analysis in architectural and urban planning systems. R. Allen, J. Bishop, P. Blandel, T. Bulycheva, T. Zyuzina-Zinchenko, K. Podgirnyak studied the architectural typology and planning of medical institutions. The foreign architectural and spatial organization of medical institutions experience is described in the architects surveys: K. Shermer, F. Meuser, H. Nickel and H. Nickel-Weller. The main researchers focus lied on solving the theoretical issues of the medical institutions architecture forming or the organization of its architectural environment speaking about the certain professional area, while the study of the dynamics of architectural and urban development of the children's treatment complexes system was not disclosed [11], [12].

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III. MAIN MATERIAL

Derived from the international experience of health care organization, the three main economic health care industry models might be specified: state budget funded public medicine (Beveridge and Semashko models); a health care system based on the principles of social insurance and market regulation with a multi-channel financing system (Bismark model); private medicine, market-based using private health insurance [13].

In the private healthcare system case all the stakeholders (insurance companies, healthcare service providers and consumers) interact as free market actors. The incentives to increase the professionalism of healthcare professionals, the provision of high quality health care, the mobility of resources and the intensive development of new medical technologies are the advantages of this model. The notable socio-economic fee is the significant drawback of this model. The trademark representative of such private health care system model is the USA. The United States of America health care system is the world's leading one in charge of clustered resources. More than 10 million of people are employed in the industry. Taking as the basis of comparison the medical expenditures, the United States ranks world first in absolute figures ($ 2.26 trillion or $ 7,439 per person) and as a percentage of GDP (16%). The United States holds the leading place in the world in the effectiveness of medical research 18 of the 25 recent Nobel Prize winners in medicine were US citizens or visiting scientists. Americans account for half of all medicines created in recent 20 years. The United States is the only industrialized state that does not guarantee its citizens a universal and comprehensive health insurance system. Despite the overwhelming successes of US health care and the health care system, millions of Americans are not able to use its services because of their high cost (16.7% of the population does not have a medical policy, 30% of which is incomplete). The structure of the US health care system is under the authority of the Department of Health and Human Services, which includes 10 regional representatives. Subsidiary governmental structures are under the Ministry of Health and Human Services: the Public Health Service and the Office of Health Care Financing control.

The US medicine system operates on the following levels of care delivery to the citizens: family medicine; hospital care, which is core one; public health (Fig. A). The US health care system includes numerous health types of services that differ in funding and functions: public health and preventative medicine (dealing with disease prevention, environmental monitoring, quality control of food, water, air, etc.); non-emergency ambulance services; simple hospital care (specializes in short-term hospitalization); complex inpatient care (providing long-term, highly skilled and technically sophisticated inpatient treatment).

American hospitals are divided into three groups: public hospitals provide services for veterans, disabled people, government officials, tuberculosis and mental illnesses patients; private profit (commercial) (up to 30% of all hospitals) · medical business enterprise that forms its capital on an individual, group and joint stock basis; private “non-profit” is initiated by religious or ethnic groups or locals, which account for up to 70% of the general fund. Today, there are 1,100 major hospital complexes in the United States, 196 of which form the backbone of the nation's child health care network.

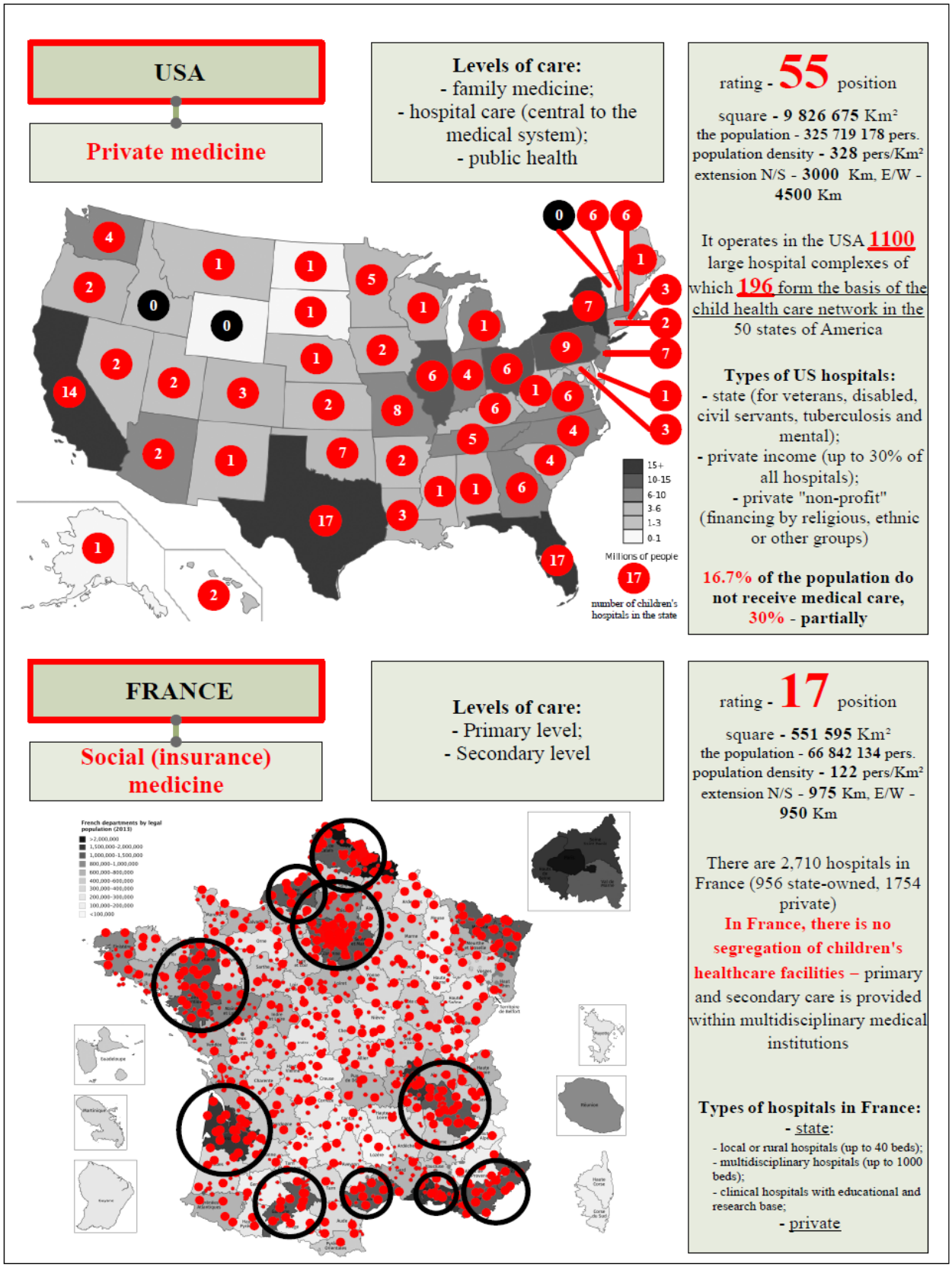
The following health care organization model is the Bismarck model, which is based mainly on compulsory social security in accordance with a certain level of income. This model is typical for such countries as Austria, Belgium, France, Germany, Netherlands, Switzerland, Japan, etc. One of the main principles of health insurance is social solidarity and subsidiarity, and the risks of individual populations are spread across the population. Studies from international organizations (European Union, OECD, WHO, etc.) confirm that France has one of the world most effective health care system. France's supreme public health authority is the Ministry of Health and Social Welfare. Today, country has a widely developed system of insurance medicine, the leading role in public health services is played by both private medical sector and the public health care network [14].

The medical care organization in France consists of two main levels: the first and the second level of the medical services provision. The first level is provided by a state-of-the-art wide network of outpatient clinics, private family doctors’ offices, medical centers. In addition, these medical services are available at hospitals. Provision of secondary level in French health care system is foreseen in public and private hospitals. Public hospitals are divided into 3 categories: local or rural hospitals with a maximum of 40 beds; general hospitals with a wide range of medical services for 1000 beds; clinical hospitals with educational and research facilities. As the study conclusion, focused on the urban planning and the development of the network aspects, one may notice that the children's treatment complexes in the world leading countries, such as France, is not separated into medical care for the infant population as a separate category. Primary and secondary care is provided within multidisciplinary medical institutions [15], [16].

Since 1996 the territorial management of the health care system has been implemented in France. This system of territorial management is regionally distributed and implemented by regional hospital agencies (ARH). The plan of the Regional Health Organization (Sros), taking into account specific medical, demographic and strategic factors allows effective planning and actualization control of the needs for medical services in each of the regions. The Regional Health Organization Plan establishes health development trends for a five-year period across the region with a view to rationalizing territorial hospital facilities and improving the quality of services. The French State Hospital System (SPH) is based on the fundamental principles of unity of the hospital system, equality of access to treatment, continuity of medical services, flexibility to ensure optimal quality of services throughout the country. The principle of unity of the hospital system implies the interaction of all medical institutions in the country: public, non-profit and private. All these serve as the public benefit of the French population.

The French Regional Health Agency possesses a quite unique authority that lies in the fact that any private medical institution can be entrusted with public service tasks (on a voluntary basis, as the request of the Regional Health Agency or even on obligatory basis). Consequently such a medical institution receives the status of ESPIC [17], [18].

Fig. A. Urban Planning Network for Children's Health Facilities in the United States and France



Nowadays the French hospital sector has 2,710 healthcare facilities with a capacity of about 416700 beds when completely loaded and approximately 63,000 beds for short-term patient admission. The hospital sector is divided into three categories: government agencies, private non-profit institutions and commercial establishments. The French state hospitals (EPS) have 956 establishments and account for approximately 62.5% of hospital beds (260,642 beds) and about 60% of outpatient admissions (37,761 beds) (Fig. A). Public hospitals are state legal entities that provide a socially useful function and are administered by an administratively territorial entity (commune) [19], [20].

The public or state sector brings together institutions engaged in medical (hospital), social (nursing homes) and both medical and social (specialized centers) spheres. The general name "public hospital" covers two major categories of public hospitals: regional hospital centers (CHRs); hospital centers (CH), general hospital centers (CHG) and local hospitals. They have identical funding but differs in functions and activity perimeter.

The French Regional Hospital Centers (CHRs) have 33 healthcare facilities that provide all the specialized current health care services for the local population and provide assistance to other regional institutions. Regional hospital centers, which include more than 200 hospital facilities, with approximately 3,000 affiliates (departments) and a capacity of 80,000 beds and approximately 7,000 day-care facilities, make up 35% of the French public hospital sector activities. Most regional hospital centers are contracted with one or more medical faculties, thus gaining the status of a regional medical-university center and thus fulfilling the triple task: patient admission, training and research [21], [22].

Amount all the regional medical-university centers 29 are located in large agglomerations (Paris, Lyon, Strasbourg, Marseille, etc.) or in large cities (Nantes, Grenoble, Rennes, Saint-Etienne, etc.). Centers of general practice (CH or CHG) have 810 healthcare facilities. All hospital centers (CH) make up more than half of the hospitalization beds (154182 beds) and most of the public sector day care units (11500 beds). The hospital centers include more than 300 local hospitals (HLs), old rural hospitals, which create about a third of the total hospital fund and about 4% of public sector beds. Usually located in rural communes, they provide short-term treatment of the first level care for the local population [23], [24].

French private hospital sector has 1,800 establishments, approximately 156,000 beds and 25,400 day-care facilities. Private medical institutions include commercial establishments (clinics) and non-profit institutions involved in public hospital service. Private commercial establishments comprise 1047 clinics, total 97,600 beds and approximately 14,000 day-care facilities. Since clinics are required to perform medical tasks for a specific territory, they must obtain prior approvals from public authorities (to create, expand, purchase large equipment, etc.). Non-profit private institutions comprise 707 establishments, 58500 beds and 11 360 day hospitals [25], [26].

These healthcare facilities with competence in various medical, social and medical-social fields provide comprehensive patient care. Typically subordinate to associations, mutual assistance organizations or foundations, these institutions rely on the management autonomy. However, they have a funding that is almost identical to public hospitals and have the same obligation to admit patients. A special category of private non-profit institutions is represented by 19 regional cancer prevention and treatment centers (CLCCs), which are health care institutions and partners of the state hospital system. These establishments provide approximately 2,900 beds in 16 regions and, according to the statute, fulfill the triple task of providing treatment, research and training solely for the prevention and treatment of cancer [27], [28].

The following medical specilaised institutions are included into the health care system of France: treatment of mental illness and gerontological patients. The organization of public psychiatry is divided into psychiatric sectors, designed to provide care in a hospital or at home, adapted to the needs of different categories of patients: adults, detainees, children and adolescents. The French healthcare system has 90 specialist psychiatric hospitals (CHS) as well as 140 private psychiatric institutions. Among the best and noteworthy multidisciplinary hospitals in France that provide quality and effective treatment for children and are internationally recognized in the field there are: Hôpital Necker-Enfants malades, Hôpital Armand-Trousseau, Hôpital Robert Debré, Hôpital Pellegrin, Hôpital Lenval, Hôpital Purpan, Hôpital Gatien de Clocheville.

IV. RESULTS

Current study of the organization peculiarities of the architectural and urban health care system in the United States of America and France revealed certain similar and distinct features. In both countries, the architectural and urban system of health care institutions is extensive and includes numerous types of health care facilities. These items are divided into two main levels of public health care: primary care within family medicine and secondary care (multidisciplinary intensive care hospitals). A distinctive feature of the architectural and urban health system in the United States is its over-specialization on various fields. This phenomenon is primarily related to the private medicine financing system, as well as the demand of the population. A distinctive feature of the architectural and urban health care system in France is the lack of segregation of the pediatric population to be served in individual health care facilities in the country. Children in France are treated in multidisciplinary medicine facilities together with the adult population, which is an important finding for countries with an excess of healthcare facilities and their specialization, including groups by age.

V. CONCLUSION

The United States of America represent the private health care system model, which is a leading one all over the globe in terms of its resources.

The USA medicine provides the following health care levels for the population: family medicine; hospital care; public health. The USA health care system includes medical services that differ in type of funding and functions: public health and preventive health services; non-emergency ambulance services; simple in-patient care; complex hospital care. Hospitals in America are divided into three types: public, private, and non-profit. At the primary care level, the infant population of the US population is served with adults by family medicine physicians. The second level of children care is characterized by a specialized network of children's health centers and hospitals. The French health care system is based on the Bismarck model, which is created on compulsory social insurance in accordance with a certain level of income. The organization of medical care in France consists of two main levels: primary and secondary levels of health care provision. The first level of medical care is provided by the developed network of outpatient clinics, private cabinets of family doctors, medical centers. Apart from this all these medical services are available in hospitals. Provision of secondary French health care system is foreseen in public and private hospitals. In France, there is no separation of health care for the infants as a separate category - medical care is provided within multidisciplinary medical institutions.

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