

## ORIGINAL ARTICLE

**ACTUAL PROBLEMS OF DERMATOVENEROLOGICAL SERVICE DEVELOPMENT: OPINION OF SERVICE PROVIDERS**

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**ABSTRACT****The aim:** To determine the features and trends of dermatovenerological health of population; to identify conditions and problems of providing dermatovenerological care.**Materials and methods:** Bibliographic, epidemiological, medico-statistical, sociological methods were used.

Scientific literature, data from the Center of Medical Statistics of the Ministry of Health of Ukraine concerning population health and dermatovenerological establishments activity on 2000-2019, data of authors' own sociological researches on opinion of dermatovenerological profile experts about available problems and ways of their decision were analyzed.

**Results:** A long-term tendency towards a decrease in the incidence of skin and subcutaneous tissue diseases by 8,6% during 2000-2017 and the incidence of venereal diseases during 2000-2019 was revealed (for syphilis – by 15,5 times, gonorrhoea – by 6,8 times). At the same time, during 2014-2019 there was an increase in the incidence of atopic dermatitis by 3,6%, of contact dermatitis – by 5,2%, of trichophytia and microsporia by 22,6%, as well as increase in the prevalence of psoriasis – by 6,0%. The incidence of sexually transmitted diseases remains significant. Trends in recent years indicate a deterioration in dermatological health and an increasing need for medical services. During healthcare reforming over the course of nineteen years there was a reduction in the amount of dermatovenerologists and their number per population by 31,5%, the amount of dermatological institutions – by 2,6 times and beds – by 3,9 times. According to 18,6±3,1 per 100 surveyed respondents, the availability of dermatovenerological care to the population is low, and its deterioration in the COVID-19 pandemic was confirmed by 80,1±4,0. Some factors that negatively affect the quality of medical services have been identified: insufficient amount and quality of medical equipment (57,1±4,0 per 100 respondents), insufficient opportunity for continuous professional development (34,0±3,8); lack of computers (30,8±3,7); lack of motivation to improve the quality of work (28,8±3,6). The priority measures that need to be taken to improve dermatovenerological medical services have been identified.**Conclusions:** The study of dermatovenerological profile experts' opinion regarding the current state of the dermatovenerological service, human resources, the availability and quality of the services made it possible to identify a number of organizational and administrative problems as well as to prioritize activities on providing dermatovenerological care to the population in the context of healthcare reform and COVID-19 pandemic.**KEY WORDS:** incidence of skin diseases and sexually transmitted diseases, amount of doctors and beds of dermatovenerological profile, sociological survey, availability and quality of care, COVID-19 pandemic

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**INTRODUCTION**

In the context of the national healthcare system reform various healthcare services face a lot of regulatory, organizational, administrative, financial, economic, scientific and educational issues. These issues are associated with trends in population health, changes in the need for various types and profiles of medical services, with implementing new organizational forms of providing services, financing, management, resource generation, with a change in the philosophy and paradigm of healthcare in general.

Achieving the goals of 2030 Agenda for Sustainable Development requires ensuring a proper level of health and well-being of the population, which, in its turn, requires the adaptation of the healthcare system in accordance with challenges and threats of the 21st century. [1].

Particularly noteworthy are four priority areas: population groups and individuals; service delivery processes; promoting health and change management [2].

Current demographic trends indicate significant aging rate, continuous increase in the proportion of older people in the general population age structure, an increase in

the proportion of older age groups that require different medical care and support [3].

At the same time, advances in medical technologies make it possible to significantly increase the volume of services provided, coverage of the population by them, as well as to improve the efficiency of healthcare, its availability and quality [4-5].

Considering mentioned above, it is important to ensure the coverage by medical services for all age groups of the population, to improve health indicators and its determinants during a person's life, to reorient healthcare models to an optimal set of population interventions with a focus on the needs of people in individual services [6-7].

A new challenge for healthcare systems is a growing demand for healthcare services amid the spread of COVID-19. Healthcare systems are often overloaded, availability of necessary medical services is reduced and mortality is increased because of disease outbreaks and because of diseases that require prevention and treatment [8].

The ability of any system to continuously provide essential healthcare services depends on the underlying disease burden and the potential of a healthcare system as the

pandemic evolves. Investments in primary medical care are critical in this respect [9].

Healthcare systems faced the challenge of balancing needs related to an immediate response to the COVID-19 pandemic with needs to continuously deliver other essential healthcare services. First of all, this related to providing a safe and effective flow of patients, improving the organization of COVID-19 screening, and targeting patients along appropriate routes. Effective administrative and coordination mechanisms as well as protocols for prioritizing and adapting services help to reduce the risk of healthcare system congestion.

Among the priority issues of providing medical services for the population, attention is needed to the problems of staffing, training and continuous professional development of personnel, as well as to the implementation of a multidisciplinary approach into the process of providing medical services, ensuring accessibility and quality [10-11].

In the list of existing problems of healthcare, and particularly medical care, a special place is occupied by the problems of the development of specialized medical services, one of which is a dermatovenerological service. Its activities are aimed at prevention and qualitative treatment of some socially dangerous and socially significant diseases.

Although the world has made progress in reducing the prevalence of sexually transmitted diseases, about 1 million people are still infected every day. According to the WHO, 376 million new cases of chlamydia, gonorrhea, syphilis, trichomoniasis are registered annually, 500 million – of genital herpes, 290 million – of human papillomavirus. These diseases increase the risk of HIV infection, have negative consequences for reproductive health, including infertility, mother-to-child transmission etc. [12].

Improving the provision of dermatovenerological care to the population is extremely relevant for Ukraine, regarding the epidemiological context, a significant need for services, existing financing problems and reorganization changes in the national healthcare system. The urgency of this issue increases due to the implementation of the Association Agreement between Ukraine and the European Union.

Research of features and trends of dermatological health showed that this problem remains relevant and requires the search for new approaches to its solution. [13-16]. In this context, it is important to assess the current state and efficiency of the service, to study foreign experience of its functioning, to identify problematic issues, to clarify the opinions of all participants of the process of providing care dermatological services, as well as to comprehend interdisciplinary approaches and intersectional interaction in the prevention of dermatovenerological pathology, taking into account the possibilities of new technologies and remote forms of service.

In Ukraine there is a lack of research regarding comprehensive solution of the problems of organizing dermatovenerological care in the context of healthcare reform that take into account international standards and approaches, what determined the need for this scientific research and the direction of scientific research.

## THE AIM

To determine the features and trends of dermatovenerological health of population; to identify conditions and problems of providing dermatovenerological care.

## MATERIALS AND METHODS

The methodological basis of the study is based on a systematic approach. Bibliographic, epidemiological, medico-statistical, sociological methods were used.

The study was carried out as part of the research work of Bogomolets National Medical University on the topic “Medical and social substantiation of the optimization of the healthcare organization in the context of the public healthcare system development” (state registration number 0120U100807).

As a scientific base was used Ukrainian and foreign scientific literature on the research topic, data from the Center of Medical Statistics of the Ministry of Health of Ukraine concerning population health and dermatovenerological establishments activity on 2000-2019, data of authors' own sociological researches on opinion of dermatovenerological profile experts about available problems and ways of their decision. The sociological survey covered 156 specialists, 26,3% of which were men, 73,7% were women. The sample included doctors of different ages: 26-35 years old – 25,6%; 36-45 years – 26,9%, 46-55 years – 23,1%; 56-65 years – 16,0%. Most of respondents had more than 10 years of experience, only 16,7% had experience of up to 5 years, 13,5% – from 5 to 9 years.

The tasks of this study are to analyze the state and trends in the incidence and prevalence of dermatovenerological pathology among the population of Ukraine; to assess the scope and results of treatment and prevention activities in healthcare institutions as well as their quality; to determine the problems of professional activities implementation; to identify the problems of staffing in healthcare system and problems of training in the context of reforming the industry.

The object of the study is dermatovenerological health of population, the organization of dermatovenerological medical care.

The subject of the study is the prevalence of dermatovenerological pathology, the scope of activities of the dermatovenerological service, the opinion of dermatovenerological profile experts, the need for resources and organizational support.

Statistical processing and mathematical analysis of research materials were performed by using the program “EXCEL” and modern methods of statistical analysis.

## RESULTS

Population health is the basis for determining the needs for various services, including such important as medical services. In fact, the morbidity in the population as a component of general health characteristic forms the need for outpatient and inpatient treatment, for health-improving and rehabilitation measures.

Analysis of the dermatovenerological morbidity of Ukrainian population revealed many problems that require the improvement of existing system of dermatovenerological medical care organization.

An assessment of dermatological morbidity showed that during 2000-2017 the prevalence of skin and subcutaneous tissue diseases decreased from 4763,9 cases to 4529,1 cases per 100 000 population, or by 4,9%. In the general structure of the prevalence of diseases in 2000, dermatological diseases occupied 3,2% and were at 10<sup>th</sup> place by rank; in 2017 – 2,6% and 9<sup>th</sup> place by rank, respectively.

The incidence of skin and subcutaneous tissue diseases over the mentioned period decreased from 4036,1 cases per 100 000 to 3688,4 cases per 100 000, or by 8,6%. In 2000, as well as in 2017, specific weight of dermatological pathology in the structure of morbidity in the population was 5,9%, which indicates its significant contribution to the formation of disease burden.

In 2017 in the structure of prevalence of skin and subcutaneous tissue diseases the leading places were occupied by skin and subcutaneous tissue infections (24,3%), contact dermatitis (16,4%) and atopic dermatitis (4,6%). Specific weight of these nosologies in the morbidity structure was 28,2%, 18,8% and 2,4% respectively.

Analysis of the morbidity dynamics during 2014-2019 revealed multidirectional trends for different nosological forms. Thus, over a five-year period, the incidence of atopic dermatitis in Ukraine increased by 3,6% and its prevalence increased by 6,6%, the incidence and prevalence of contact dermatitis increased by 5,2% and 5,2% respectively, the incidence of trichophytia and microsporia also increased by 22,6%, the prevalence of psoriasis increased by 6,0%. At the same time, the prevalence of feet mycoses decreased over a five-year period by 3,1%, scabies – by 31,5% (fig. 1).

Preventive examination reveals only about a quarter of all cases of trichophytia (23,3% in 2019), scabies (27,9%) in the population. As for the sexually transmitted diseases morbidity, during 2000-2019 there was a clear tendency towards its decrease. Thus, the incidence of syphilis in the population of Ukraine decreased by 15,5 times, gonorrhea – by 6,8 times (fig.2).

At the same time, its level remains high. Analysis of gender and age characteristics of sexually transmitted diseases in 2019 revealed higher levels of morbidity of men with syphilis by 1,5 times, gonorrhea by 2,0 times compared to women. Among some age groups, the highest incidence of syphilis was in men and women in the age of 35-39 years, very high – in the age of 40-59 years and 20-29 years. The incidence of gonorrhea, chlamydial lymphogranulomatosis, trichomoniasis and urogenital mycoplasmosis in men and women was highest at a young age of 20-24 years.

The prevalence of syphilis according to the contingent of patients who were under dispensary supervision in 2019 was about the same in rural (45,1 cases per 100 000 population) and urban (45,4 cases per 100 000 population) areas. However, the prevalence of gonococcal infection according to the contingent of patients who were under dispensary supervision was three times higher in urban areas.

Preventive examination reveals about two thirds of all cases of syphilis (70% in 2019), about half of all cases of gonorrhea (46,6%), chlamydial infections (47,3%), trichomoniasis (55,1%) and urogenital toxoplasmosis (47,5%).

It is clear that high or low levels of morbidity do not always reflect the true picture of the incidence of pathology among the population, as it is possible not to detect cases due to low availability of healthcare, lack of specialists in the area, low population activity, poor quality of diagnosis, etc. With regard to sexually transmitted diseases, their incomplete detection is also associated with the development of private practice and violations of such cases registration and epidemiological research of contacts. Therefore, in each case there is a need in an in-depth analysis, that takes into account the availability of healthcare facilities, availability and quality of medical care, analysis of patients' opinions.

The study of the resource supply of the dermatovenerological service revealed a decrease in the number of working dermatovenerologists during 2000-2019 by 1274, and the amount of dermatovenerologists positions per population – by 31,5%. The number of positions of pediatric dermatovenerologists decreased during this period by 47 people, and number of dermatovenerologists per pediatric population – by 47,5%. At the same time, there was a decrease in a number of dermatovenerological institutions and offices by 2,6 times, bed stock – by 3,9 times, including for children – by 2,6 times, dermatovenerological beds per population – by 3,3 times, including for children – by 1,9 times.

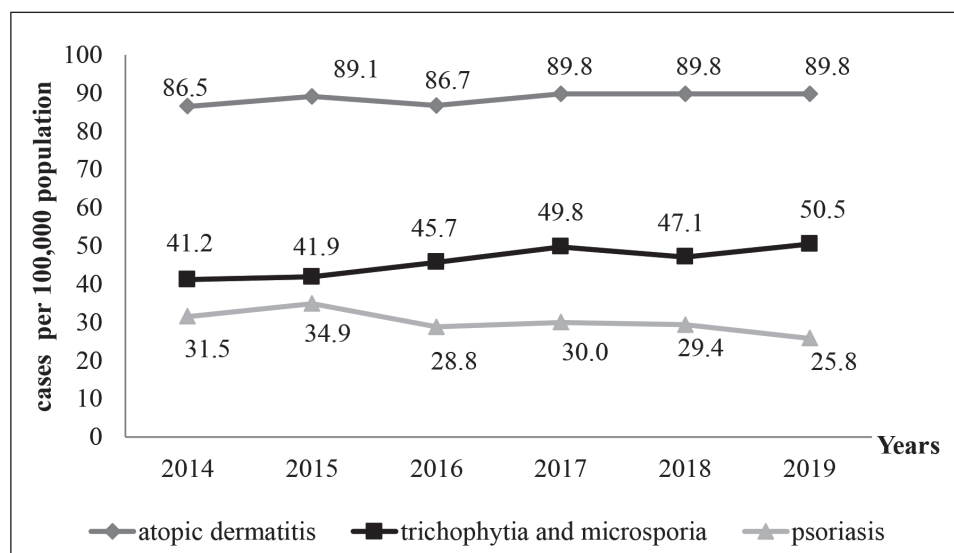
Analysis of dermatovenerological beds during 2014-2019 showed an increase in the average number of beds occupancy from 317,4 to 320,4 days, especially for children – from 305,3 to 352,0 days. At the same time, the average duration of treatment in specialized beds for adults decreased from 15,7 to 14,9 days; for children – increased from 15,6 to 16,5 days. High occupancy of children dermatovenerological beds and increased duration of treatment on them may indicate a high need for them and the severity of the pathology.

The sociological survey found that 39,7±3,9 per 100 respondents considered themselves as highly qualified specialists, 11,5±2,6 as specialists of average qualification, 47,4±4,0 consider they could not assess themselves. At the same time, 51,3±4,0 per 100 respondents rated the qualification of Ukrainian specialists as average, 40,4±3,9 – as high, and only 8,3±2,2 – as insufficient.

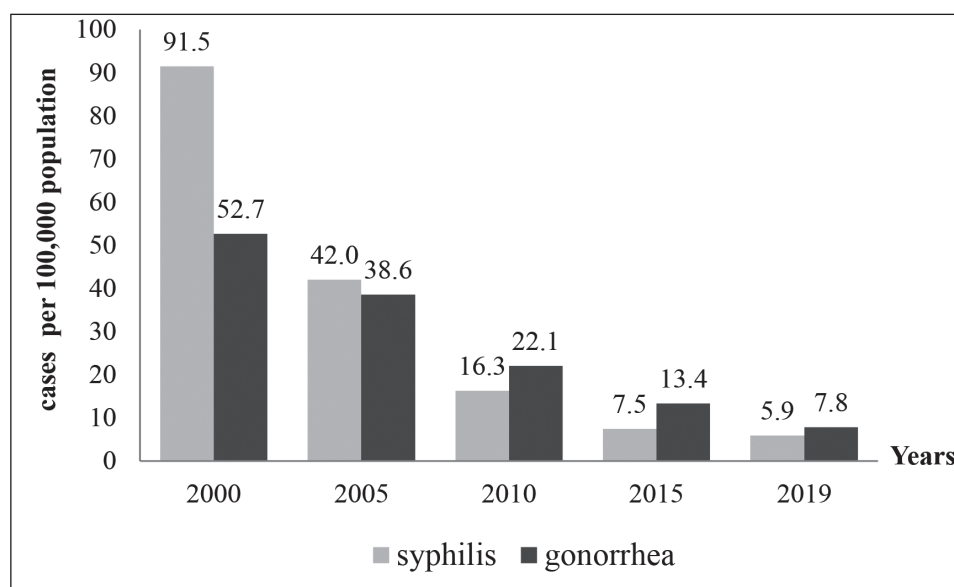
At the same time, 22,4±3,3 per 100 physicians indicated that they cannot always use the available knowledge, skills and competencies in their work due to the lack of modern equipment and technologies; 5,8±1,9 per 100 respondents cannot do this for other reasons.

In general, more than half of the respondents consider the quality of medical services provided to patients as high (55,8 per 100 respondents), 36,5±3,9 consider they cannot assess it, and only 1,3 per 100 respondents consider their quality to be low.

Regarding the availability of dermatovenerological care to patients, 18,6±3,1 per 100 respondents are considered



**Fig. 1.** Incidence of atopic dermatitis, trichophytia, microsporia and psoriasis in the Ukrainian population during 2014-2019 (per 100 000)



**Fig. 2.** Incidence of syphilis and gonorrhea in the Ukrainian population during 2014-2019 (per 100 000)

the availability as low,  $12,2 \pm 2,6$  cannot estimate;  $66,7 \pm 3,8$  per 100 respondents are considered the availability as high.

Among the reasons that reduce the quality of dermatovenerological care, respondents indicated insufficient medical equipment ( $57,1 \pm 4,0$  per 100 respondents), insufficient opportunities for continuous professional education ( $34,0 \pm 3,8$ ); lack of computers ( $30,8 \pm 3,7$ ); lack of motivation to improve the quality of services ( $28,8 \pm 3,6$ ); limited career perspectives ( $27,6 \pm 3,6$ ); insufficient technological equipment ( $24,4 \pm 3,4$ ); unsatisfactory informational support ( $16,7 \pm 3,0$ ); unsatisfactory work organization ( $14,7 \pm 2,8$ ); unsatisfactory coordination of activities with colleagues and support units ( $11,5 \pm 2,6$ ); problems with access to the Internet ( $9,6 \pm 2,4$ ). As it can be seen from the answers, there is a number of resource, technological, organizational and managerial problems in dermatovenerologists working conditions.

The generalized assessment of the resource provision of healthcare facilities in which specialists work showed that it does not always meet the modern requirements – that was indicated by  $21,8 \pm 3,3$  per 100 respondents. The

financial support of the structural unit was estimated as mostly sufficient  $31,4 \pm 3,3$  per 100 respondents, mostly insufficient –  $36,5 \pm 3,9$ ; completely insufficient –  $17,3 \pm 3,0$ .

About half of the respondents ( $46,8 \pm 4,0$ ) searched for information with proven efficiency in the sources like Cochrane Library and Medline systems only occasionally,  $22,4 \pm 3,3$  – searched often, while  $29,5 \pm 3,7$  did not perform a search for such information. More than half of the respondents use professional information from foreign sources in their work, but one out of five – not regularly, one out of four – only sometimes.

Assessing the impact of healthcare reform on the volume of their own activities,  $10,9 \pm 2,5$  per 100 respondents noted their increase;  $47,4 \pm 4,0$  – slight increase;  $30,1 \pm 3,7$  did not notice changes.

Dermatovenerologists pointed at the impact of the COVID-19 pandemic on the availability of dermatovenerological care for patients and its quality. Thus, a certain deterioration in the availability of this care for patients was confirmed by  $64,7 \pm 3,8$  per 100 respondents, a real deterior-

ration in accessibility –  $15,4 \pm 2,9$ . At the same time, almost half of the respondents (48,1 per 100) are convinced that despite the pandemic the quality of care has not changed.

Among the existing problems of professional activity, experts pointed out the inadequacy between salary and the level of qualification and quality of work ( $77,6 \pm 3,3$  per 100 respondents), relevance of changing the job in the future ( $44,2 \pm 4,0$ ) and hesitation about this change (19,2). As the reasons for the possible job change respondents called the unsatisfactory level of the salary ( $85,9 \pm 2,8$ ), low social status ( $32,1 \pm 3,7$ ), lack of stability ( $42,9 \pm 4,0$ ), lack of career opportunities ( $18,6 \pm 3,1$ ).

The main occupational difficulties faced by dermatovenerologists in the context of the COVID-19 pandemic were the lack of personal protective equipment ( $63,5 \pm 33,9$  per 100 respondents), gaps in the management of medical and diagnostic process ( $57,7 \pm 4,0$  per 100 respondents), lack of communication between different healthcare facilities ( $56,4 \pm 4,0$  per 100 respondents) as well as between healthcare units and professionals ( $51,4 \pm 4,0$  per 100 respondents), lack of knowledge in the management of patients with coronavirus infection in a pandemic ( $42,3 \pm 4,0$  per 100 respondents), bad sanitary and epidemiological activities in healthcare facilities ( $17,9 \pm 3,1$ ).

Experts noted a decrease in medical activity of patients with dermatological diseases – that was indicated by  $60,9 \pm 3,9$  per 100 respondents, and  $23,7 \pm 3,4$  noted a significant decrease, which, in their opinion, led to late treatment and late diagnosis of diseases.

Among the priority measures that need to be taken to improve the medical care of patients with dermatovenerological diseases during the pandemic,  $76,9 \pm 3,4$  per 100 respondents indicated the use of digital platforms for the provision of dermatovenerological services (websites, informing systems, electronic prescriptions, automated programs for tracking the supply and availability of equipment, medicines, etc.),  $75,6 \pm 3,4$  – pointed at providing health care professionals with personal protective equipment. As priority measures respondents have also identified the improvement of healthcare funding while taking into account the growing needs of the pandemic ( $62,2 \pm 3,9$ ), implementing an effective system of staff motivating ( $46,2 \pm 4,0$ ), providing healthcare facilities with the necessary human resources ( $41,0 \pm 3,9$ ), improving the logistics of healthcare facilities ( $42,9 \pm 4,0$ ), improving the technological equipment of healthcare facilities ( $37,2 \pm 3,9$ ), ensuring safety regime for patients and employees in health care facilities ( $26,5 \pm 3,5$ ).

Improving the effectiveness of prevention of dermatovenerological pathology in a pandemic will contribute to its improvement at the level of primary ( $85,9 \pm 2,8$  per 100 respondents) and specialized ( $89,1 \pm 2,5$ ) medical care, active development of the public health system ( $41,7 \pm 3,9$ ) and improving the provision of collective public health services, for example active informing the population about the risks of dermatovenerological pathology, advocacy, communication, social mobilization in the interests of health ( $41,7 \pm 3,9$ ), effective epidemiological surveillance

and monitoring of the situation with COVID-19 and the incidence of dermatovenerological pathology ( $36,5 \pm 3,9$ ), implementation of measures for promoting population health, improving the socio-economic determinants ( $22,4 \pm 3,3$ ), resumption of the sanitary-epidemiological service for effective healthcare, including environmental control ( $15,4 \pm 2,9$ ).

## DISCUSSION

The results of the sociological survey of dermatovenerologists are important basis for substantiating the rationale for measures to improve the organization of medical care. They showed the responsible attitude of specialists to the assessment of their own professional level, to the professional level of their colleagues, to the state of dermatological care, its availability and quality, to the existing problems of prevention and treatment processes as well as the impact of healthcare reform and the COVID-19 pandemic. At the same time, they allowed to identify the priority ways to solve the existing problems (according to dermatovenerologists).

This is especially important to consider taking into account the prevalence of dermatovenerological pathology. After all, the negative trends of growth in the incidence of atypical dermatitis by 3,6%, contact dermatitis by 5,2%, trichophytia and microsporia by 22,6%, as well as growth in the prevalence of psoriasis by 6,0% during 2014-2019 indicate a worsening of dermatological health and increasing need for health services.

Despite the decline in the incidence of sexually transmitted diseases in recent decades, its level remains unacceptably high. Young people in the age of 20-35 need special attention, because the highest incidence of syphilis, gonorrhea, chlamydial lymphogranulomatosis, trichomoniasis and urogenital mycoplasmosis is observed in this age group. Prevention of sexually transmitted diseases should begin at early age to cover all segments of the population because the age of 20-35 is an active fertile age, and there is a high probability of adverse effects of sexually transmitted infections on reproductive health and neonatal health. In the context of defects in the registration of sexually transmitted diseases in the private network of healthcare facilities, it is necessary to improve the accounting and epidemiological investigation of cases.

Given the significant reduction in the positions of dermatovenerologists during the nineteen-year period and their amount per population by 31,5%, the amount of dermatological institutions – by 2,6 times and beds – by 3,9 times, the assessment of the of conditions of dermatovenerological service functioning by physicians reveals existing problems, current realities and outlines perspectives. In this context needs attention the low availability of dermatological care (that was indicated by  $18,6 \pm 3,1$  per 100 respondents), reasons for its quality decline, such as insufficient medical equipment (as indicated by more than half of respondents); lack of computers (confirmed by a third of respondents); low motivation, imperfect technologies, organizational and managerial problems.

Finding effective ways to counter modern challenges and threats requires taking into account such realities as the COVID-19 pandemic, which has reduced the availability of services, reduced the medical activity of patients with dermatovenerological diseases and tightened the conditions for providing the necessary care. Identifying barriers to qualified patient care – which, according to physicians, are associated with a lack of personal protective equipment, administrative errors, lack of communication strategies and lack of knowledge on managing patients with coronavirus infection – identifies areas for improving service delivery, prioritizes them and determines the need in an intersectoral approach to problem solving and development of public health services and its interaction with the medical network.

## CONCLUSIONS

Significant levels and tendencies of increase of dermatological pathology among the Ukrainian population, high rates of sexually transmitted diseases morbidity, especially among young people and people of reproductive age, their negative effects on health provoke the need to improve the dermatovenerological healthcare service.

A significant reduction in the resource supply of the dermatovenerological healthcare services, including institutions, bed capacity, and the amount of human resources led to an intensification of their use and to decreased availability of healthcare services.

The study of dermatovenerological profile experts' opinion regarding the current state of the dermatovenerological service, human resources, the availability and quality of the services made it possible to identify a number of organizational and administrative problems as well as to prioritize activities on providing dermatovenerological care to the population in the context of healthcare reform and the COVID-19 pandemic.

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## Conflict of interest:

*The Authors declare no conflict of interest.*

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