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**THE INFLUENCE OF THE CONCEPT OF COMMUNITY TRAGEDY ON THE UKRAINIAN HEALTHCARE SYSTEM IN THE CONDITIONS OF WAR**

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*The Ukrainian healthcare system has been severely affected by the Russian full-scale invasion, which changed the previous demands and resources. The limited healthcare funding is currently uncontrollably dispersed across a range of destinations, which, in turn, may lead to the degradation of the existing financial resources. An aim of the present study was to examine the aforementioned issue in context of the tragedy of commons concept, with subsequent application of the approaches for the avoidance of the latter. In this paper we argued that the case with wartime funding of Ukrainian healthcare system falls under the scope of “the tragedy of the commons due to the presence of the required factors, i.e., the limited commons; individuals following their purpose; and the uncoordinated behavior of those individuals. We also submitted that the general strategies for solving tragedy of the common kinds of problems could be as well applicable to the Ukrainian case. However, we do recognize that any categorization is a simplification of reality and may lead to losing valuable details. We ended up proposing the following proposition for solving the challenges with wartime healthcare funding: (1) humanitarian assistance should be collected and distributed at a centralized level; (2) strategies and priorities for healthcare funding must be set; (3) healthcare funding should be effective and match the local context.*

**Key words:** Ukraine, tragedy of the commons, healthcare system, war, funding.

**Connection of the publication with the planned scientific research.**

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**Introduction.**

Since the beginning of the Russian full-scale invasion, the Ukrainian healthcare system has been facing severe challenges in terms of damaged infrastructure [1, 2], killed medical personnel [3], physically and mentally traumatized civilians and combatants [4, 5]. The war has undoubtedly shifted the priorities in healthcare development, bringing forth new obstacles, such as a shortage of medical personnel, equipment, medicines, healthcare infrastructure with basements and bomb shelters, programs for physical and mental rehabilitation [6, 7, 8].

The aforementioned challenges are even more exacerbated by the war-related economic decline [9], and uncontrolled dispersing of funding through the wide range of healthcare needs. Nevertheless, all initiatives for dealing with those challenges relate to the post-war period, despite the war in Ukraine still going on and is expected to be protracted [10]. Accordingly, further proceedings of non-effective spending of the limited healthcare funding may lead to another tragedy, degrading the existing financial resources and endangering the very functioning of the healthcare system.

Whereas post war reconstruction of the Ukrainian healthcare system has been receiving strong policy and academic interest, wartime funding of this system has received much less attention. Only a few publications provide some insights as to how certain fields of the Ukrainian healthcare system should be managed during the war, while the groundful research on this matter is absent.

Accordingly, the guidelines and inspiration for the present work were mainly drawn from the general doctrine about tragedy of commons. We supplemented the

theory with the most recent data about the impact of war on the Ukrainian healthcare system and proposals for the improvement of the situation obtained from the reports of international organizations and NGOs, publications of the governmental authorities, legislation and our own professional experience.

**The aim of the study.**

The present paper is focused on the examination of whether the tragedy of the commons doctrine applies to the wartime Ukrainian healthcare system funding, i.e., uncontrolled spreading of resources without prioritizing the most critical needs. It also aims to identify and structure the possible directions for solving this problem. However, as with any classification, it is a simplification of reality, and the aim of the present work is not merely to categorize possible solutions in one type or another, but rather to present an approximate direction within which further initiatives and ideas could be generated.

**Main part.**

To determine whether the Ukrainian case falls under the scope of the tragedy of the commons, it seems logical to begin with the overall definition of the latter and subsequently identify those characteristics which will finally single out the criteria for its application. The tragedy of the commons is the well-developed economic theory applicable in almost any sphere [11]. Lloyd W. F., who proposed this doctrine in 1833 [12]. The biologist Hardin G. further developed this idea into economic theory [13], and since then numerous scholars from various fields have been studying it [14].

On an abstract and simplified level, the concept of the tragedy of the commons could be described as the situation, when individuals with unlimited and non-coordinated access to finite common resources, following their interests, exhaust those resources [15]. Thereby, this doctrine is composed of three intertwined but distinguishable elements: (1) the limited commons, (2) individuals following their purpose, and (3) the uncoordinated behavior of those individuals. Accordingly, to

show that this doctrine is relevant to the Ukrainian case, all three above mentioned factors would be addressed in turn.

The first criterion, «the limited commons», denotes any finite resources to which members of certain groups share access [16]. Possible commons within the healthcare sphere are diverse and might range from the funding to medical personnel and healthcare facilities [17]. Nevertheless, for the sake of brevity, only financial resources would be considered in this paper. What should be emphasized at this point, is that healthcare funding in Ukraine is directly dependent on the payment ability of the State, since it is collected through the model general taxation [18]. That ability was severely affected by the Russian full-scale invasion [19, 20]. Even with the external monetary support, the funding needed for the functioning of the healthcare system far exceeds the available budget [21].

Another factor that may indicate the applicability of the tragedy of common doctrine is «the individuals following their purposes». For the present paper, stakeholders of the Ukrainian healthcare system would be considered as such individuals. Since the full-scale Russian invasion, several initiatives within the healthcare system have been proposed, and some have already been implemented [22]. The latter covers such issues as the restoration of the damaged healthcare facilities [23], procurement of medical services in the pre-war amount, and building rehabilitation facilities for the veterans and war victims [24]. It is not argued that those initiatives are worthwhile and needed for the Ukrainian healthcare system, but rather that stakeholders have different visions of the most critical healthcare needs.

Proceeding with the last condition for applying the tragedy of commons theory, i.e., «the uncoordinated action of individuals». As of now, there is no single strategy for the healthcare system functioning during the war. Most of the existing plans were adopted before the full-scale invasion and [25], respectfully, did not consider present day demands and funding abilities. Due to the absence of a clear and specific vision of the future of the Ukrainian healthcare system, existing limited financial resources proceed to be dispersed across a wide number of distinctions, not satisfying any of them.

The analysis performed above allows us to conclude that at this stage of the Ukrainian healthcare system development, the tragedy of the common looks like a natural result of this process. While such a result is possible, it is not inevitable and, further, we would reflect on the application to the present case of certain principles developed for the solution for the Tragedy of Commons type of problem.

Avoiding the Tragedy of the Commons. Based on the doctrine proposed by the Nobel laureate Elinor Ostrom [26], and further modified for the application within healthcare by Tim Wilson, Gwyn Bevan, Muir Gray, Clara Day, and Joe McManners [17], we argue that principles of leading, defining and managing the commons could be a solution for the tragedy of commons within the Ukrainian healthcare system. These principles tend to reflect and structure the current challenges regarding governance of healthcare funding.

Nevertheless, such categorization is certainly a trade-off between setting a clear and simple framework for solving a problem and losing valuable nuances. Accord-

ingly, a proposed direction for avoiding the tragedy of commons within the Ukrainian healthcare system is not meant to be the detailed plan, which could be directly implied into the work of the respective governmental agencies. Rather it is a first attempt at an identification and categorisation, which is expected to provoke further discussion and research.

1. Leading the commons. The first principle implies that commons must be led so as to unite various stakeholders together for the achievement of mutual goals [27]. The leadership role is equally essential for funding administration within the healthcare system, especially during an emergency, while the State's ability to pay is limited [28].

It would be inaccurate to say there is no leadership over healthcare funding in Ukraine, except for new financing sources such as humanitarian assistance [29], which are generally provided directly to the consumer institution, usually without any external assessment of the needs and benefits of such funding [30]. However, it remains arguable whether centralized leadership over humanitarian assistance would be advantageous. From one point of view, setting priorities, distribution of funds, and monitoring performance are simpler to conduct on the centralized level [31]. Notably, integration of humanitarian assistance into the national health benefits package may help expand the healthcare services in accordance with the current wartime needs, satisfaction of which is complicated by solely public funding [32].

On the other hand, the centralized procedure of collecting and distributing humanitarian assistance may be time consuming due to the complicated process and not always correspond to the local context of each particular region [33]. For example, while pharmaceutical companies wish to provide Ukrainians with certain charity medicines that are about to expire, centralized procedures are not recommended due to the latter's length. Nevertheless, direct provision of hospitals with humanitarian assistance may bring such challenges as the lack of accountability, non-equal distribution of resources among the facilities, and, as a result, non-effective usage of those funds [34].

Therefore, both complete centralization and decentralization of collecting and distributing humanitarian assistance may be challenging. A hybrid system appears more relevant at first sight, although it would be complicated to delimit the concrete application spheres of each of them.

2. Defining the commons. The commons are too diversified to manage without clear and specific priorities [35]. Therefore, setting the latter should be considered, especially in a time of limited financial resources when all demands are impossible to fulfill. Moreover, strategies allow us to use the funds effectively and ensure the system's functioning by satisfying the most critical needs [36].

Most healthcare strategies in Ukraine relate either to pre-war or post-war periods [37]. Nevertheless, pre-war strategies have outdated priorities and financial resources, irrelevant to wartime, with limited funding, changing demography, and epidemiology. The draft post-war strategy also does not match the present war context in Ukraine and remains instead a general accumulation of the different visions of priority areas without reasonable consideration of the existing resources.

Besides, the National Recovery Council, which wrote those drafts, lacks the legal power to adopt binding instruments [38].

While the war in Ukraine is still going on and is expected to be protracted, the functioning of the healthcare system must be ensured. To do this, the relevant authorities must create the healthcare strategy as soon as possible, considering all available financing resources, present-day demands, and challenges.

3. Managing the commons. The last principle implies, among the others, that the administration of commons must match the local context, be effective and clearly regulated [39]. Due to future economic constraints, efficient and responding to the wartime use of limited financial resources is critical in Ukraine.

Notably, healthcare funding must be carefully allocated considering not only short-term benefits of such investment but also its long-term consequences, such as the running cost of the project, economic effectiveness, and changing needs in the healthcare services [40]. This covers the need to match the capacity and location of healthcare services to the changing demographics [41]. For instance, assessing the economic effectiveness of investment, before restoration of the damaged hospital is recommended, especially considering the migration of patients [42].

Careful allocation of healthcare funding also covers the need to create clear rules for the resource's usage [43]. In the context of the Ukrainian case, determining the exact rules applied to assessing the effectiveness of healthcare investment is of pivotal importance. This helps to avoid the potential fragmentation of the assessment procedure and limits the space for possible corruption.

### Conclusions.

The findings of the study suggest that the uncontrolled dispersing of healthcare funding during the war may lead to the tragedy of commons, i.e., degradation of financial resources. Nevertheless, the latter could be avoided by the timely application of the principles of managing, defining and leading commons. Notably, application of the aforementioned principles could help to diminish the uncontrolled dispersal of funding and ensure a more effective wartime spending of the limited financial resources.

### Prospects for further research.

Future research is needed to examine the potential application of the principles of managing, defining and leading commons in more detail and identify effective strategies and concepts for their usage in relation to wartime funding of the Ukrainian healthcare system.

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## ВПЛИВ КОНЦЕПЦІЇ ТРАГЕДІЇ СПІЛЬНОТ НА СИСТЕМУ ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ В УМОВАХ ВІЙНИ

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**Резюме.** У статті акцентовано увагу на ризиках і викликах у фінансуванні системи охорони здоров'я України у воєнний час з точки зору концепції «трагедія спільнот». Ця проблема залишається актуальною, оскільки російське повномасштабне вторгнення серйозно вплинуло на сталість фінансування української системи охорони здоров'я. На думку експертів, на сьогодні обмежене фінансування сфери охорони здоров'я зосереджено за різними напрямками, що, відповідно, може призвести до вичерпання наявних фінансових ресурсів.

Дане дослідження мало на меті вивчити можливість застосування концепції «трагедії спільнот» з точки зору неконтрольованого розподілу ресурсів без визначення найважливіших пріоритетів для української системи охорони здоров'я під час війни, а також запропонувати відповідні напрямки та заходи для її уникнення.

Дане дослідження є кабінетним з використанням таких методів дослідження як бібліосемантичний, аналіз і синтез та орієнтоване на загальне вчення про трагедію спільнот.

За результатами дослідження встановлено, що концепція «трагедія спільнот» може бути застосована в умовах українських реалій, зокрема стосовно обмеженості суспільних благ та можливості переслідування власних цілей окремими категоріями населення при прийнятті управлінських рішень. Показано, що загальні шляхи підходу щодо уникнення трагедії спільнот, тобто принципи керівництва, визначення та управління загальними благами, можуть застосовуватися і для прийняття рішень щодо фінансування системи охорони здоров'я.

З метою нівелювання ризиків і прогалин у фінансуванні, з точки зору цієї концепції, пропонується звернути увагу на визначення пріоритетних напрямків фінансування під час війни, управління фінансовими потоками з урахуванням поточної ситуації, централізацію збору та розподілу гуманітарної допомоги. Реалізація діяльності у вказаних напрямках сприятиме забезпеченню найбільш ефективному використанню обмежених фінансових ресурсів.

**Ключові слова:** Україна, трагедія спільнот, система охорони здоров'я, війна, фінансування.

**THE INFLUENCE OF THE CONCEPT OF COMMUNITY TRAGEDY ON THE UKRAINIAN HEALTHCARE SYSTEM IN THE CONDITIONS OF WAR****Shevchenko M. V., Khomenko V. V.**

**Abstract.** The article focuses on risks and challenges in financing the health care system of Ukraine in wartime from the perspective of the concept of «the tragedy of the commons». This problem remains relevant, as the full-scale Russian invasion seriously affected the sustainability of the financing of the Ukrainian health care system. According to experts, today the limited financing of the healthcare sector is concentrated in various directions, which, accordingly, may lead to the depletion of available financial resources.

The purpose of this study was to study the possibility of applying the concept of «the tragedy of the commons» from the point of view of the uncontrolled distribution of resources without determining the most important priorities for the Ukrainian health care system during the war, as well as to propose appropriate directions and measures for its avoidance.

This study is a study using such research methods as bibliosemantic method, analysis, and synthesis and is focused on the general teaching about the tragedy of the commons.

According to the results of the study, it was established that the concept of «the tragedy of the commons» can be applied in the conditions of Ukrainian realities, in particular, concerning the limitation of public goods and the possibility of pursuing one's own goals by certain categories of the population when making management decisions. It's shown that the general approaches to avoiding the tragedy of commons, that is, the principles of leadership, definition, and management of the common goods, can be applied to decision-making regarding the financing of the health care system.

To level risks and gaps in financing, from the point of view of this concept, it is suggested to pay attention to the identification of priority areas of financing during the war, management of financial flows taking into account the current situation, centralization of the collection and distribution of humanitarian support. Implementation of activities in the specified directions will contribute to ensuring the most effective use of limited financial resources.

**Key words:** Ukraine, tragedy of the commons, healthcare system, war, funding.

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There is no conflict of interest between the authors of this article.

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