

Maciej Nowak

## **The Spatial Management System in Poland: The Categorisation of the Problem from the Perspective of the Literature on the Subject**

### **Abstract**

*Objectives:* The article aims to distinguish institutional assessments of the Polish spatial management system's weaknesses in the literature on the subject, as well as place them in the context of the international discussion and the historical context.

*Research Design & Methods:* The article diagnoses the defects of the spatial management system in Poland, published in 2010–2020, which were confronted with the current theses concerning spatial management systems in Europe and those related to the spatial management system in the Polish People's Republic before 1989. Based on this, the recurring problems and the key challenges for the Polish spatial management system have been identified.

*Findings:* One can consider the correctness of the assumption that the system in spatial management (considering historical and social conditions and differences, etc.) was less developed than the current one, adopted in Poland after 1989. On the other hand, the solutions adopted in some Western European countries can be considered as much better-prepared than those in Poland (the basis for such a thesis is the enormous spatial chaos generating serious costs, which was indicated in the Polish literature on the subject to a much greater degree than in other countries).

*Implications / Recommendations:* There should be a wider interdisciplinary connection and coherence of the expressed assessments, as well as a wider consideration of Western European countries' experience.

*Contribution / Value Added:* The article offers a critical analysis of the literature on the subject concerning spatial management in Poland, proposing new research directions and referencing the literature from the Polish People's Republic, as well as literature on spatial management systems in other European countries.

*Keywords:* spatial management system, local spatial development plans, spatial policy in Poland

*Article classification:* review article – original literature review

*JEL classification:* R11

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**Maciej J. Nowak (Professor)** – Department of Properties, Faculty of Economics, West Pomeranian University of Technology in Szczecin; ul. Żołnierska 47, 71-210, Szczecin; e-mail: macnowak@zut.edu.pl; ORCID: 0000-0001-8149-8995.

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## Introduction

The issues of the sphere related to spatial planning and development (spatial policy) are the subject of numerous analyses, including scientific ones, and as such cover various disciplines. Despite the passage of time (and more advanced research in various directions), the current spatial planning system provokes extremely critical opinions. The details of such assessments differ, but the general tendency is similar: the spatial order is insufficiently protected in the present spatial management system. The above translates into varied and vast costs.

This article aims to distinguish institutional assessments of the Polish spatial management system's weaknesses in the literature on the subject as well as place them in the context of the international discussion and the historical context. This will be achieved by means of presenting key assessments, expressed mainly in recent years, from the perspective of:

- the represented thematic sphere (legal / urban-architectural / geographical / related to public management, public policy science, and/or institutional economics);
- their scope (referring to the entire spatial planning system / its selected segments / specific detailed issues);
- the suggested solutions (systemic, i.e. those including the concept of a comprehensive amendment to the currently applicable provisions; or fragmented).

Particular attention was paid to the local context, which is vital to the spatial planning system. For this categorisation to be presented in a broader context, selected analyses of the spatial management system were discussed, including previous solutions in Poland's spatial management system as well as current problems in other European countries' spatial management systems. These two issues constitute a crucial point of reference for further considerations. For this article, an attempt was made to characterise the most important problems diagnosed in the literature in both cases.

It should be emphasised that this approach to the problem is a continuation of considerations on the optimal role of individual spatial policy tools (important from the perspective of public management and public policy science). The scientific discussion is also to be practical in the author's opinion.

In the first part of the article, the key theses of literature concerning the assessment of European countries' spatial management system as well as Poland's spatial management system before 1989 are distinguished. The publications containing a comprehensive broad assessment of individual systems are selected. Then, the literature on the current spatial management system in Poland is verified. Three groups of publications have been distinguished here. All publications containing a comprehensive interdisciplinary analysis are analysed. In the author's opinion, the most important and original publications are those containing a comprehensive and sectoral assessment of the spatial management system from the perspective of one discipline.

## Selected problems of the spatial management system in the Polish People's Republic (before 1989)

The spatial management system in the years 1944–1989 in Poland was subject to numerous changes. The key provisions for spatial planning and development after 1944 can be classified in the following way (Table 1):

In the 1940s, spatial planning was considered as separate, but simultaneously inseparably connected with economic planning (as understood at that time, i.e. in the communistic, economic, and political-system vision). The latter was to demonstrate to the "national propriety" (before 1989) goals and means of implementation, as well as to spread the processes over time. Spatial planning, in turn, was only about answering the question "where?" In the literature on the subject from the 1970s and the 1980s, there were more in-depth assessments of the spatial solutions of that time, although in line

Table 1. Changes in the spatial management system in the Polish People's Republic (1944–1989)

Year	Characteristics of regulation
1946	Poland's act on spatial planning was passed, containing a three-tier planning system based on plans created at the national, regional, and local levels. The planning structure was hierarchical and there was an obligation to adopt local plans at the local level (which was periodic).
1961	The act on spatial planning was passed, introducing a uniform planning system. Spatial and economic planning was reflected in the requirement to incorporate economic plans into spatial plans and align the target periods of spatial and economic planning. Investments had to be coordinated with the state of spatial development. The three-tier approach to plans was maintained as well as their timeline. Meanwhile, the scope of social discussion on spatial planning was limited.
1970	Several changes were introduced, including the possibility of drawing up simplified spatial development plans for rural communes as well as defining new urban standards for residential areas in cities.
1984	Another act on spatial planning was passed; it introduced a wider protection of agricultural and forest land, limiting the possibility of developing areas not covered by plans. Local plans were divided into general and detailed. Plans for functional areas were also introduced.

Source: Own study.

with earlier approaches (see Secomski, 1966). When performing one of the most comprehensive analyses of spatial planning during the Polish People's Republic, Nowakowski (2013) drew attention to the specificity and differences of the conditions at that particular time. He also pointed out that since the 1970s, a gradual scientific development of issues related to spatial planning has been noticeable. The issues most frequently appearing in the analysed context are indicated below, along with the references of individual authors with regard to tools of spatial policy. These are the following:

- no actual application of local plans (first-stage plans at first and then detailed ones), so a significant part of them was of limited effectiveness, or even “on paper only” (Malisz, 1981; Pańko, 1978);
- frequent changes to the formula of plans (Mrzygłód, 1971);
- insufficient flexibility of plans and the lack of actual integration of development policy tools, as well as the need for independence of local authorities (Malisz, 1984; Jakobsche, 1985; Pańko, 1978);
- a threat related to spatial conflicts (Secomski, 1972; Regulski, 1982);
- the lack of sufficient solutions guaranteeing an effective environmental protection linked

to both industrial and individual activities (Kozłowski, 1983).

In retrospect, it can be seen how some problems diagnosed at that time were resolved eventually (for example by adding provisions guaranteeing a wider protection of the environment and nature). Nevertheless, the problems that occur today are also noticeable. They come down to the need to ensure the effectiveness of the implementation of planning provisions (especially in the field of realisation), as well as ensure the flexibility of spatial planning and an effective resolution of spatial conflicts.

### **Selected problems of the spatial management system in European countries**

The issues related to Poland's spatial management system should be related to the spatial management systems in European countries in the same period, i.e. 1944–1989. The literature of both topics is extensive. In this article, its review is intended only as a reference for the following parts. Therefore, only those publications that provide a comprehensive assessment of spatial management systems are included. Nevertheless, in this case,

one has to be cautious with far-reaching analogies. Newman and Thornley (1996) differentiated families of spatial planning systems, distinguishing between British, Germanic, Napoleonic, and Scandinavian ones. The differences boil down to, among other things, the role of local plans (sometimes they are typically regulatory acts, while sometimes only coordinating acts), the degree of detail in generally applicable regulations, and the interdependence of various public authorities. This classification must be subject to numerous additional reservations (Zakrzewska-Półtorak, 2016) and to the dynamics of changing conditions. In the literature on the subject devoted to this issue, the fact of differentiating countries not only from the perspective of the political system but also taking into account the economic, cultural, and social conditions is explicitly noted (Reimer, Getimis, & Blotevogel, 2014; Booth, Breuillard, Fraser, & Paris, 2007; Nadin & Stead 2008; Nadin, 2012; Reimer & Blotevogel, 2012). A simple juxtaposition of formal and legal solutions is also problematic (e.g. comparing local plans in different countries), as a simple action in this area carries the risk of major simplifications.

Considering the above barriers, it is worth enumerating the key problems and challenges related to European spatial management systems that are highlighted in the literature on the subject. In this context, in many cases, attention is drawn to the fact that spatial-policy tools are not fully effective in dealing with the expansion of settlement and the phenomenon of urban sprawl (Blotevogel, Danielzyk, & Münter, 2014; Geppert, 2014). The scale of this problem varies – sometimes it is related to the statement of spatial chaos, while at other times, it refers only to providing the developed areas with a new function (Blotevogel, Danielzyk, & Münter, 2014). Another recurring issue is spatial conflicts and the not fully defined role of individual actors (Nadin & Stead, 2014; Maier, 2014). Attention is also paid to the problem of the effectiveness of individual planning regulations, especially local plans.

In this context, one can also differentiate the most important challenges and directions of changes that are being discussed with regard to European spatial management systems nowadays. These are:

- the issue of further Europeanisation of spatial policy, also translated into local planning (Reimer, Getimis, & Blotevogel, 2014; Davoudi, 2016; Cotella, 2018);
- the issue of combining the local planning with development policy, ensuring that local planning is correlated with various other spheres (also sectoral) (Dimitrovska-Andrews, 2016; Dovenyi & Kovacs, 2016; Nadin, Stead, Zonneweld, & Dąbrowski, 2018);
- the use of more and more developed informal institutions in spatial policy (Blotevogel, Danielzyk, & Münter, 2014);
- the development of participation and monitoring in spatial management systems (Geppert, 2014; Lingua & Servillo, 2014; Nadin & Stead, 2014; Stead & Nadin, 2011);
- developing an optimal planning style (Reimer, Getimis, & Blotevogel, 2014; Maier, 2014; Nadin, Stead, Zonneweld, & Dąbrowski, 2018).

### **Assessment of the spatial management system in Poland in the 2000s – classification of the literature on the subject**

The reference point for the selection of literature on the subject in this article is the Act of 2003 on Spatial Planning and Development. Of course, the “spatial management system” is a much broader concept, covering various processes, not only those related to specific legal regulations. Nevertheless, in the current formula, it is the poorly designed regulations that reflect the weaknesses of the entire system most visibly. The literature from 2010–2020 was considered. Critical analyses had appeared earlier (at least since 2005), but a longer time is required to prepare the more comprehensive ones, i.e. those associated with data collection and

observation of specific processes. It is not about presenting all the publications (or their mutual evaluation) at the indicated period of time.

The basic classification of publications containing an in-depth assessment of the spatial management system should be made. The author of the article distinguishes it as follows:

- a) comprehensive interdisciplinary studies containing analyses and conclusions related to the entire spatial management system;
- b) analyses covering the entirety (or majority) of the spatial planning system, but from the perspective of one discipline only;
- c) analyses covering selected spheres/problems in the spatial management system.

So far, no such classifications have been carried out in the Polish literature. Other classifications are also possible, e.g. tailored to specific thematic issues. However, this one is optimal from the point of view of the goal of this article.

### **Comprehensive analyses of the spatial management system in Poland in the 2000s**

First, the focus was on analyses directly relating to the spatial management system (point *a* in the previous section). Reference should be made to the assessments contained in the Concept of Spatial Development of the Country (*Koncepcja Przestrzennego Zagospodarowania Kraju*, 2011). Without a detailed analysis of this document, one should pay attention to its objective No. 6 – namely “restoring and consolidating the spatial order”. In the light of problems such as excessively chaotic and expansive buildings, the exclusion of a significant part of land from use, low quality of public spaces, and gaps in the planning acts system, the authors of the Concept are certain that there is a need for a comprehensive reform of the spatial management system (conclusions contained in the stance of the Main Committee on Urban Planning and Architecture [Pol. *Główna Komisja Urbanistyczno-Architektoniczna*] of November 26, 2010, were similarly formulated). In the first report prepared

in the analysed period, Olbrysz and Koziński (2011) drew attention to the costs of uncontrolled urbanisation as the basic problem of the spatial management system, indicating that the costs associated with designating too large areas for housing development in local plans amount to 129 billion PLN. In turn, Kowalewski et al. (2013) found the existence of a long-term crisis of spatial management in Poland. In their opinion, spatial planning does not fulfil its role, because it does not effectively regulate the settlement, urbanisation, and investment processes. On the one hand, the key problems include insufficient planning coverage of the country (especially in large cities and transport corridors), while on the other hand, they revolve around the adoption of local plans for areas with limited investment and areas for which development is unrealistic. In addition to the costs related to the excessive allocation of land in local plans for housing development, the authors drew attention to, among other things, the costs of damage to buildings and technical infrastructure, the maintenance costs of technical infrastructure, as well as the costs of commuting and the “speculative bubble” on the real estate market. Therefore, they recognised “the monitoring of urbanisation processes” as a key element in changing the system. One can also cite here cyclical analyses of the state and conditions of planning work in communes, which in 2012 were included in a compact publication within one year (Śleszyński, Komornicki, Solon, & Więckowski, 2012). Based on comprehensive analyses of conditions related to the conduct of spatial policy, the authors indicated that the planning system does not ensure the protection of the spatial order, and the procedures related to the work on planning acts are too slow. They suggest restoring large-area local plans with simplified requirements, or increasing the role of studies on the conditions and directions of spatial development as the directions of solutions. The continuation of all included threads was part of the report on spatial chaos. In its synthesis, Śleszyński, Kowalewski and Markowski (2018)

confirmed and refined (based on a much broader research material) earlier diagnoses about the costs of spatial chaos, simultaneously indicating that they amount to 84.3 billion PLN annually for the whole country. Among the postulates related to the system reform of spatial management, the authors pointed to the need to ensure equal access to spatial resources. This includes, among other things, a coherent system of praxeological and regulatory planning, a reform of public institutions, and wider protection of the spatial order. Besides, a reference was made to another team's study, postulating the creation of integrated development planning (Markowski & Drzazga, 2015), which included, among other things, postulates for a wider protection of the existing land use and land development, adopting local plans for areas constituting a functional whole, a rational tax system and fees related to spatial planning, and limiting the role of administrative decisions in the spatial management system.

Thus, comprehensive and interdisciplinary analyses are mutually convergent. They contain in-depth research leading to comprehensive conclusions as a basis. From the formal and legal perspective, they do not resolve any doubts (related to whether and how individual proposals can be implemented). Nevertheless, their key value is a detailed demonstration of those fundamental problems in the spatial management system that need to be counteracted.

A completely different role is played by comprehensive analyses (prepared from the perspective of one discipline only) of the spatial management system (i.e. analyses included in point *b* of the classification in the previous subsection – this group also includes comprehensive analyses of the conditions for the operation of local government units or public authorities, covering the sphere of the spatial management system, and also comprehensive drafts of new laws). The condition for including publications in this group is a reference to the entire spatial management system, and it being related to its assessment (therefore, comments to the act

on spatial planning and development were not included in this group). One of the key views was expressed (in a series of publications) by Markowski (2010). The author associated spatial planning with the theory of imperfect markets. Considering the context of public interest (related to public goods) and distinguishing the problem of urban sprawl, the author emphasised the need for a broader integration of development policies as well as flexibility in planning. The conclusions by Drzazga (2018) are similar, as this author indicates that systemic solutions in planning must be preceded by an assessment of how the chosen intervention methods will affect the activities of economic operators (solutions to the problem of the inefficiency of public authorities in the spatial management system are also included here (see Nowak, 2017)). In turn, Parysek (2017) enumerated eleven weaknesses of the Polish system of spatial planning, among which special attention should be paid to non-conceptual and non-systematic selectivity, formalisation, particularism, and improvised actions. It is worth comparing these theses with the comprehensive expertise of Wierzbowski (2014), who highlights in detail inconsistencies in all regulations related to the spatial planning. Some positions contested not so much the regulations in force as the way they were applied (Ney, 2011). From a similar perspective, foreign authors recognise that the most problematic elements of the system are about too many decisions on building conditions as well as too weak social participation in planning processes (Cotella, 2014). It is also possible to distinguish analyses which translate – as in system reports – the diagnosed problems into the scope of the protection of the spatial order (Zawadzka, 2017). The solutions to the above problems vary. While there is no doubt about the effective power of merely changing the regulations, proposals for bigger changes in the scope of competences of individual public administration bodies can be found (Gorzym-Wilkowski, 2017). From a legal perspective, Izdebski (2013) called for a redefinition – especially concerning the current

regulations – of the right to the environment, the right to housing, the right to the city, and the right to good space. Comprehensive (and staged) legal changes were proposed by Zachariasz (2015). They would include a broader (more in-depth than currently) balancing of interests in planning, the introduction of the principle of implementation of settlement projects in already built-up areas, the replacement of the current compensation rules related to the adoption of local plans with general principles contained in the Civil Code, the removal of the decision on development conditions, and carrying out a comprehensive verification of approved local plans. The proposal also includes the introduction of specialist acts, thus modifying the formula of the current special acts.

Analyses concerning specific sectors in the spatial management system

Analyses covering selected sectors related to the spatial management system should be presented separately (a classification proposal is included below). There are more of these types of studies previously mentioned. The degree of development and their substantive value also vary. This article is not about a comprehensive list of these publications or about selecting the most valuable ones. Publications dealing with individual problems were also omitted. In this case, the point is to present the direction of the debate on the spatial management system with the help of specific examples. The focus was on publications that deal with the sector more extensively (i.e. in monographic terms). Here, one can distinguish:

- legal analyses;
- analyses conducted as a whole from one perspective, different from the urban and legal sphere;
- interdisciplinary analyses.

Assessments of a specific sector or a wider issue of the spatial development system from a legal perspective are usually included in publications aimed at a comprehensive analysis of the institution. The consequence of such an analysis is the formulation of specific diagnoses. These can be formal and technical diagnoses

(Rokicka-Murszewska, 2019), diagnoses which include the role of administrative courts (Dziedzic, 2012), or diagnoses relating to topics important from the urban perspective. Examples of important issues taken up within various disciplines include public interest (Woźniak, 2018), the scattering of buildings (Bąkowski, 2018; Fogel et al., 2014), social participation (Szlachetko, 2017), or the role of special investment laws also in the spatial management system (Bąkowski, 2020). A broader monographic approach also makes it possible to refer to the urban perspective, detailed to varying extents. The strongest advantage of this type of publication is the diagnosis of specific weaknesses of individual spheres of the system from the legal perspective, along with the indication of the directions of solutions. It is also important to present a formal and legal framework in this respect, which would be difficult to cross under any reforms. A weaker element is the lack of full intuition (despite making every effort) of the overall conditions related to the urban perspective (which, on a side note, is not an objection to specific authors, but, rather, a natural consequence of representing a specific discipline).

It is also possible to distinguish comprehensive analyses related to the spatial management system, also representing other thematic spheres. Among them, one can acknowledge those related to the economic consequences of urban development (Budner, 2019; Lityński, 2019), environmental protection (Chmielewski, Śleszyński, Chmielewski, & Kułak, 2018), nature protection (Giedych, 2018), monument protection (Tomczak, 2018), real estate appraisal (Krajewska, 2017), or the sphere of public policy science (Anioł, 2019; Zybala, 2019). Such analyses contain valuable diagnoses related to the undertaken areas, very often pointing to negative practices and their consequences. However, the proposed conclusions do not always fully comply with the legal framework – both the one in force and the one possible to develop.

Interdisciplinary analyses usually include a specific (important from the perspective of the spatial management system) issue from the

perspective of a variety of authors, also representing different disciplines. In such cases, however, the problem lies in the lack of the sufficient coordination of the arguments put forward. The optimal direction seems to be a better combination and unification of these perspectives; attempts in this regard have already been made by Nowak (2020) as well as Nowak, Śleszyński and Ostrowska (2020).

### Problems and challenges of the Polish spatial management system – compilation and comparison

Based on the conducted analyses, the problems and challenges concerning the spatial management system that are currently being diagnosed in the literature on the subject have been compared with the problems and challenges identified

in the literature on the subject in European countries, as well as the literature on the subject in times of the Polish People's Republic.

Table 2 shows that despite differences, some similar diagnoses can be found in each case. One can consider the correctness of the assumption that the spatial management system (considering historical and social conditions and differences, etc.) was less developed with regard to the current system in Poland. On the other hand, the solutions adopted in some Western European countries can be considered as much better-prepared than in Poland (the basis for such a thesis lies in the enormous spatial chaos which generates serious costs, which was indicated in the Polish literature on the subject to a much greater extent than in other countries). With the full awareness of the need to nuance such an approach, it can be assumed that in the analysis of all cases (i.e. Poland's spatial

Table 2. Key problematic issues concerning the assessment of the spatial management system in the literature on the subject

Selected literature on the determinants of spatial policy in		Literature on the subject concerning the contemporary system of spatial management (in Poland since the 1990s)	
European countries (currently)	Polish People's Republic (1944–1989)	Comprehensive approach	Sectoral approaches
<ul style="list-style-type: none"> <li>– problems with shaping the spatial settlement policy by tools and solving problems caused by urban sprawl;</li> <li>– effective development of functions of specific areas;</li> <li>– the development of informal institutions;</li> <li>– combining spatial policy/urban planning with (economic) development policy;</li> <li>– optimal role of individual actors in spatial policy;</li> <li>– the development of social participation and monitoring in spatial policy.</li> </ul>	<ul style="list-style-type: none"> <li>– no application of local spatial development plans;</li> <li>– lack of planning flexibility and integration with other spheres of development;</li> <li>– the problem of spatial conflicts;</li> <li>– spatial planning versus environmental protection.</li> </ul>	<ul style="list-style-type: none"> <li>– costs of uncontrolled urbanisation and spatial chaos;</li> <li>– the lack of a proper regulation of settlement processes by spatial-policy tools;</li> <li>– weak legal regulations;</li> <li>– poor social participation;</li> <li>– serious spatial conflicts;</li> <li>– the lack of a sufficient integration of development spheres.</li> </ul>	<ul style="list-style-type: none"> <li>– the ineffectiveness of specific solutions, e.g. in the field of planning fees, forms of nature protection, or the protection of monuments and cultural heritage;</li> <li>– the lack of integration of different points of view in the spatial management system (in particular the lack of connection between the legal and urban spheres);</li> <li>– the lack of an adequate definition of the public interest in the spatial planning system.</li> </ul>

Source: Own study.



management system before 1989, after 1989, and spatial management system in European countries), attention was paid to similar issues. It is necessary to distinguish the following: the context of limiting spatial conflicts (which can also be understood as a broader diagnosis of individual actors' role in the spatial management system), limiting urban sprawl, integrating spatial policy with other development policies, and deepening the social participation. Therefore, it can be assumed that the indicated problems constitute a broader challenge that cannot be fully resolved by means of a specific planning practice, and even less by means of specific legal regulations. It seems important to respond flexibly to the emerging challenges, which should be facilitated by informal institutions in planning (for more on this subject, see also Mikula, 2019) as well as by increasing the emphasis on the need to use methods related to co-management in the spatial management system (these, however, are included in certain bases, guaranteeing the protection of the spatial order).

The list of key diagnoses of the Polish spatial development system leads to several conclusions. In the years 2010–2020, comprehensive analyses covering most scientific disciplines were carried out. The costs of spatial chaos, legal inconsistencies, as well as environmental, natural, and cultural needs were diagnosed in detail. As a rule, most of the conclusions of such analyses are mutually consistent and compatible. On the other hand, the key postulates relating to the optimal directions for further analyses include:

- a better interdisciplinary connection and coherence of the expressed assessments, as only this guarantees the effectiveness of solutions implemented in practice;
- a link between scientific research and practical action. In various spatial management systems in Europe (e.g. France and the UK), it is solved in a much better way than in Poland. In the Polish system, despite some formal possibilities, the link between science and practice is still too weak;

- a wider consideration (and adaptation to the spatial management system in Poland) of the experiences of Western European countries. In this case, it is not about copying all solutions, but, at least, about expanding the discussion on informal institutions and models of social participation (as indicated above – also a wider implementation of concepts related to public co-management), and even about a more detailed consideration of individual conditions for the integration of development policies (which is strongly associated with an interdisciplinary approach to analyses).

### Concluding remarks

The postulated directions for further research and analysis should be derived from different perspectives and in various ways. There is no doubt, however, that at the present stage, many comprehensive and sectoral diagnoses have already been developed and – if the legal and socio-economic conditions do not change radically – there will be no need to prepare further ones (the COVID-19 pandemic can be an element partially affecting the spatial management system, but it does not necessitate the extensive modification of previous conclusions, e.g. those concerning the costs of spatial chaos, or a wider emphasis on selected issues related to green infrastructure, energetic transition, transport, or the development of public spaces).

Obviously, the problem lies in implementing the proposed directions of changes (both at the national and regional levels as well as in local planning practice). There is a serious risk that the diagnosis will continue to receive limited response from public authorities at various levels. However, this must not be a reason to call into question the purposefulness of discussions and analyses. Apart from the issues already pointed out, it seems crucial to base local spatial policies on analyses. These analyses should also be carried out on the local scale, but the above-mentioned publications should inspire them. These publications

are currently rarely noticeable (which is also a separate problem of the spatial management system) and less often used in specific activities. It is also important and necessary to implement the latest public governance concepts to spatial management systems.

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Dominika Dusza, Maciej Furman, Małgorzata Gałązka-Sobotka,  
Iwona Kowalska-Bobko

## Evaluating Opportunities to Implement Hospital-Based Health Technology Assessment (HB-HTA) in Selected Hospitals in the Kraków Municipality

### Abstract

*Objectives:* Hospitals are the entry point for newly implemented innovative health technologies. Hospital-based health technology assessment (HB-HTA) has been developed to facilitate the use of new health technologies in hospitals. The purpose of this study was to evaluate opportunities to implement HB-HTA in selected hospitals located in the Kraków municipality in Poland.

*Research Design & Method:* We used shortened version of a questionnaire from a project called “Implementation of the Hospital-Based HTA (HB-HTA) – Hospital Assessment of Innovative Medical Technologies”. The participants were hospital managers working in three hospitals located in Kraków: the Ujastek Medical Centre Limited Liability Company (LLC), the Brothers Hospitalers of Saint John of God Hospital LLC, and the University Hospital in Kraków. The survey was conducted and made available online.

*Findings:* Each of the participating hospitals had implemented new medical technologies. Applications for the implementation of innovative medical technology had been considered by the hospital directors; however, departmental heads were required to act as the lead applicants. Two out of these three hospitals had developed both an application template for the implementation of innovative technologies and a formalized path for their examination. The main source of financing new technologies is the hospitals’ funds. Before implementing the technology, hospitals had consulted the following agencies: the National Health Fund, the Ministry of Health, medical technology manufacturers or producer organisations, medical voivodeship consultants, and other hospitals. The financial consequences of the medical technologies implementation were analyzed.

*Implications / Recommendations:* The hospitals define innovative medical technologies in a correct way. There are no separate HTA units in any of the hospitals. The surveyed hospitals have the capability to implement HB-HTA.

*Contribution / Value Added:* The implementation of HB-HTA processes in the analysed hospitals may require the hospital managers to broaden knowledge about this area. The implementation of HB-HTA procedures in hospitals may have positive economic effects on the entire health care system.

*Keywords:* HB-HTA, hospitals, Kraków, budget, innovative medical technologies

*Article classification:* pilot study

*JEL classification:* D25, H41, O22, R1

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**Dominika Dusza** – Faculty of Health Sciences, Institute of Public Health, Jagiellonian University Medical College; ul. Skawińska 8, 31-066 Cracow, Poland; e-mail: dusza.dominika96@gmail.com; ORCID: 0000-0002-3100-718X. **Maciej Furman** – Faculty of Health Sciences, Institute of Public Health, Jagiellonian University Medical College; ul. Skawińska 8, 31-066 Cracow, Poland; e-mail: maciej.furman@uj.edu.pl; ORCID: 0000-0002-0315-350X. **Małgorzata Gałązka-Sobotka** – Institute of Healthcare Management, Lazarski University; ul. Świeradowska 43, 02-662 Warsaw, Poland; e-mail: m.galazka-sobotka@lazarski.edu.pl; ORCID: 0000-0002-3889-3719. **Iwona Kowalska-Bobko** – Faculty of Health Sciences, Institute of Public Health, Jagiellonian University Medical College; ul. Skawińska 8, 31-066 Cracow, Poland; e-mail: iw.kowalska@uj.edu.pl; ORCID: 0000-0003-3728-2323.

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## Introduction

According to the European Network of Health Technology Assessment (EUNetHTA), HTA is a multidisciplinary process that summarises all information on the consequences of using a given health technology in a systematic, transparent, and impartial manner (Sampietro-Colom et al., 2016).

The first aim of HTA is to ease decision-making in the field of proper health technology reimbursement, and it is based on robust scientific research and economic analysis under the conditions of a given health care system. HTA helps to answer specific questions related to the likely value of health technologies (Sampietro-Colom et al., 2016). Furthermore, it helps to optimise the use of available resources for health care in order to obtain health outcomes of the greatest value. Owing to the work of HTA experts, funds for medical technologies could be allocated effectively. Independent evaluation makes it possible to minimise the misuse of public funds in health care (Halmesmäki, Pasternack, & Roine, 2016).

Nowadays, HTA is widely used to make and support coverage decisions in many countries around the world. Most member states of the European Union have national HTA agencies and they operate on the basis of their own HTA analytical and decision-making frameworks (created independently). The main goal of these agencies is to shape an evidence-based reimbursement policy and assist stakeholders in the health care system (Cicchetti et al., 2008).

## Literature review

Following the example of other European countries, Poland introduced the HTA process to support reimbursement decision-making processes in 2005, mainly for pharmaceuticals. Initially, the Agency for Health Technology Assessment and Tariff System (*AOTMiT*) was established as nationwide HTA, with responsibility for creating HTA guidelines. The *AOTMiT* is an opinion-giving and advisory body working on behalf

of the Minister of Health and as such is responsible mainly for the evaluation of pharmaceutical technologies whose manufacturers are applying for reimbursement (Lach et al., 2017). The agency's most important tasks include: the preparation of reports on the evaluation of health care services; the preparation of verification analyses for the evaluation of pharmaceuticals, foodstuffs for particular nutritional uses, and medical devices; and issuing opinions on draft health programmes for ministers and local government units (Sowada et al., 2019).

HTA is not always related to drug technology and operation within national HTA agencies; it is also conducted at the hospital level. Hospitals are usually the entry point for new technologies. They can replace or complement the existing technology, which is why policymakers need to know their value in relation to the current standard used in the hospital. Hospital-Based Health Technology Assessment (HB-HTA) aims to facilitate managers' decision-making regarding the introduction of new medical technologies in hospitals (Grenon, Pinget, & Wasserfallen, 2016). HB-HTA covers the processes and methods used to create HTA reports in and for hospitals.

HTA activities at the hospital level provide answers to managers' questions regarding the effects of implementing new technologies after taking into account the specific organisation of work in the hospital. Thus, the HTA process must be adapted to hospital conditions and take into consideration the hospital's limited resources. HB-HTA measures and evaluates the impact of an individual's performance on clients (patients), the hospital, and the society as a whole (Sampietro-Colom et al., 2015).

The following categories of the units of HB-HTA are distinguished:

1. Independent groups. This is the first stage of an individual's development within HB-HTA. They operate informally in a hospital to provide support during decision-making.
2. Integrated HB-HTA (integrated units). These are small units comprising a limited number

of employees. These units are embedded in a system of institutional cooperation that includes universities and research centres. Thus, they engage a network of experts in various fields to support their actions.

3. Standalone HB-HTA units. These units operate mainly inside hospitals, which is why any influence from national or regional HTA organisations is limited. These are more established HB-HTA units, operating on the basis of formalised and standardised procedures.
4. Integrated specialised HB-HTA (integrated specialised units). These units are integrated with the regional or national HTA. Their activities must be formally subject to cooperation with a national or regional HTA agency, but may retain a certain level of autonomy. They are characterised by a high level of formalisation, also in terms of the division of employee duties (Kowalska-Bobko et al., 2020).

Each country has its own specificity in how medical technology is organised; therefore, a variety of solutions in this area are being implemented around the world. Countries differ with regard to the type of HB-HTA units, the level of formalisation, the features of activities, and the type of employed professionals. Differences are also significant in funding sources and healthcare actors involved in shaping HB-HTA.

In Europe, Spain is considered as the country with the most developed system of Hospital-Based Health Technology Assessment. HTA is well-known by Spanish doctors and managers due to the long tradition of Spanish national/regional HTA agencies. For several years, Spanish regions have been justifying investment decisions as being in line with HB-HTA methodology. However, rather than being an obligatory action for all regions, it is about good management practice implementation. The current role of HB-HTA units in the health technology management in Spanish hospitals is organised in a different way and depends on the advancement on the hospital health technology assessment system in a given

facility or region (Sampietro-Colom et al., 2017; Bernal et al., 2018).

In Finland, there are no regulations binding hospitals to incorporate HB-HTA guidelines; therefore, using HB-HTA methodology is voluntary. Among institutions promoting good practices with regard to HB-HTA one can highlight the HTA National Agency, the FinoHTA, and the authorities of fifteen hospital districts. The National Agency is responsible for coordinating tasks, collecting databases, and developing methodology. Districts define the area of assessment, formulate the assessment, and watch over the process of technology implementation. Although the majority of Finnish hospitals are familiar with HB-HTA, not all of them apply these principles. Currently, there is a need to implement the mini-HTA approach, especially in university hospitals. This will help to standardise the criteria for implementing new medical technologies and enable cooperation between those hospitals which decide to adopt such criteria. In order to disseminate HB-HTA on a larger scale, it is necessary to adjust the methods of health technology assessment to the needs of a given hospital environment, as well as to establish cooperation with clinicians from various fields of medicine (Roine & Pasternack, 2017; Halmesmäki, Pasternack, & Roine, 2016).

In the literature, there is no detailed information about Austrian HB-HTA units. Therefore, it is difficult to estimate the impact of the functioning of these units on the Austrian health care system. Available resources indicate that reports on new technologies have had a positive impact on hospital managers' decisions to invest in these technologies. Austrian HB-HTA practices were incorporated locally, i.e. at the hospital level. The results of the HB-HTA reports helped in making decisions regarding the implementation of a given medical technology. It should be noted that HTA made it possible to limit the implementation of technologies without evidence-based medicine support, and it reduced expenditures on ineffective medical technologies (Sampietro-Colom et al., 2015).

## Materials and methods

Hospitals are the entry point for new medical technologies. It is, therefore, important that the technology assessment process is embedded in a hospital setting and takes its specific features into account. Currently, no hospital in Poland has an HB-HTA official unit. The aim of the current study was to analyse the processes of implementing new medical technologies in three hospitals located in the Kraków municipality: the Ujastek Medical Centre LLC; the Brothers Hospitallers of Saint John of God Hospital LLC; the University Hospital in Kraków.

The research tool was a shortened version of the questionnaire used in the project “Implementation of the Hospital-Based HTA (HB-HTA) – Hospital Assessment of Innovative Medical Technologies”, co-financed by the National Centre for Research and Development. This was under the Strategic Programme of Scientific Research and Development, known as the ‘Social and economic development of Poland in the conditions of globalising markets’, or ‘GOSPOSTRATEG’ (Narodowe Centrum Badań i Rozwoju, 2017). The project manager approved the use of this research tool. The questionnaire consisted of 2 open-ended questions and 14 closed questions. For the purposes of the research, medical technologies were divided into three groups: diagnostic procedures, therapeutic procedures, and organisational systems supporting

the provision of services. The aim of the survey was to obtain knowledge about hospitals’ methods and criteria for implementing innovative medical technologies.

Four hospitals located in the commune of Kraków were invited to take part in the pilot study. Consent to participate in the study was expressed by three medical entities: the Ujastek Medical Centre limit LLC – a hospital with the gynecology and obstetrics profile, located at 3 Ujastek Street in Kraków; the Brothers Hospitallers of Saint John of God Hospital LLC; and the University Hospital in Kraków, which is an Independent Public Health Care Entity. Hospitals were selected so that they differed both in the legal form (an independent public health care institution versus commercial companies) and in the founding authority/owner. The differences between hospitals also concerned the number of departments (one hospital with a large number of departments and two small ones were selected) and the degree of reference. These differences could have had a significant impact on the activities of HB-HTA in the hospitals.

After consent had been obtained, questionnaires were sent to representatives of each institution. The surveys were made available online due to the epidemiological situation in the country and in the world (the threat of COVID-19).

Table 1 presents basic information about the selected hospitals.

Table 1. Characteristics of the studied group of hospitals

	Ujastek Medical Center LLC	Brothers Hospitallers of Saint John of God Hospital LLC	University Hospital in Kraków
Legal form	Commercial company	Commercial company	Independent public health care institution
Ownership / Authority	Neomedic Group	Convent of Bonifrats	Jagiellonian University
Reference degree	III	II	III
Number of wards	2	5	31
Contract with the National Health Fund (NHF)	Yes	Yes	Yes
Paid services	Yes	Yes	Yes

Source: Based on information obtained from the hospitals’ official websites.



## Results and discussion

All medical entities that participated in the study agreed to collect and process basic information about the hospital, including the unit responsible for implementing innovative medical technologies in the facility.

The first question concerned the definition of implementing innovative medical technologies. All three hospitals considered the definition of implementing innovative medical technologies to involve developing new medical technologies or improving the existing technologies in order to solve a health problem, increase the efficiency of provided services, reach new patient groups, and increase the efficiency of spending public funds. None of the facilities recognised the implementation of innovative medical technologies as the introduction of new medical technologies or fundamentally changed ways of organising services, resulting in better accessibility and quality of health services; nor did they provide their own definition of this process.

The second question asked participants to indicate the definition of innovative medical technology. Two out of the three surveyed units indicated the definition to be: new or significantly improved technology which was used for the first time in a given hospital. One hospital recognised innovative medical technology as a new or significantly improved technology that was first used in the domestic market. No hospital provided its own definition of innovative medical technology.

The third question concerned the areas in which innovative medical technologies are implemented

in the hospital. All three hospitals implemented new technologies in the therapeutic area. Two hospitals did not implement technology in other areas. One hospital implemented innovative technologies in all three aforementioned fields (diagnostic procedures, therapeutic procedures, and organisational systems supporting the provision of benefits) (see Table 2).

Questions four and five concerned the identification of those who apply and consider applications for the implementation of innovative medical technologies in the hospital. Each hospital indicated that the person applying for the implementation of new technology was a hospital employee. In two of the medical entities, applications were sent by a head of the department; in the third one, they were sent by a medical worker with the status of a manager or an expert.

Two hospitals reported that applications for the implementation of innovative medical technology are examined by hospital directors. The third hospital has an organisational unit that deals with examining such applications. Members of this unit include directors of the medical department, the department for infrastructure, and the financial department.

In each surveyed facility, the final decision on the implementation or rejection of innovative medical technologies is made by the hospital manager. None of the hospitals has a specially-appointed team to make decisions on the implementation of innovative medical technologies, nor do they use the founding body for this purpose. External institutions themselves (e.g. local governments) are not interested in the descriptions of the innovative

Table 2. Areas where innovative medical technologies are implemented in the surveyed hospitals

Areas of implemented medical technologies	Ujastek Hospital	Brothers Hospitallers of Saint John of God Hospital LLC	University Hospital
Diagnostic procedures	NO	NO	YES
Therapeutic procedures	YES	YES	YES
Organisational systems supporting the provision of benefits	NO	NO	YES

Source: Own elaboration.

technologies introduced by the hospital coming under their areas. All information on this is collected in Table 3.

One hospital had developed both an application template and a formalised application process for the implementation of innovative medical technologies. Thus, this unit had introduced an internal regulation process for the applications for innovative technologies. In the remaining hospitals, the examination of the applications for innovation was not regulated (see Table 4).

Question nine concerned sources of financing innovative medical technologies implemented in the hospital. The following sources were indicated:

- own funds (three hospitals);
- funds obtained under the implementation of European Union / EEA projects (one hospital);
- funds transferred by the local government (one hospital);
- research grants (one hospital).

Additionally, one medical entity indicated the resources of the Ministry of Health (health programmes) and the National Health Fund (pharmaceutical programmes) as a source of financing (see Table 5).

Another question related to the hospitals' consultation with other entities of the health care system during the process of assessing the potential benefits of innovative medical technologies. Hospitals reported consultations with: the National Health Fund, the Ministry of Health, manufacturers of medical technologies (e.g. medical equipment, pharmaceuticals) or producer organisations, provincial consultants, and other hospitals. In addition, one hospital reported consultations with other entities when the need arises, but these entities were not specified. One hospital held no consultations during the assessment of innovative medical technologies (see Table 6).

Table 3. Information about those responsible for the implementation of innovative medical technology in the surveyed hospitals

People responsible for:	Ujastek Hospital	Brothers Hospitallers of Saint John of God Hospital LLC	University Hospital
Applying for technology implementation	Head of the ward	Head of the ward	A medical employee with the status of a manager or an expert
Examining the application	Hospital manager	Hospital manager	A special organisational unit
Making a decision to implement/reject a technology	Director of the hospital	Director of the hospital	Director of the hospital

Source: Own elaboration.

Table 4. Information about the process of implementing innovative medical technologies in the surveyed units

Information about the technology implementation process	Ujastek Hospital	Brothers Hospitallers of Saint John of God Hospital LLC	University Hospital
Model application for the implementation of innovation	NO	NO	YES
Formalised path for processing application	NO	NO	YES

Source: Own elaboration.

Table 5. Sources of financing innovative medical technologies implemented in the surveyed hospitals

Sources of financing for new technologies	Ujastek Hospital	Brothers Hospitallers of Saint John of God Hospital LLC	University Hospital
Own funds	YES	YES	YES
Funds obtained as part of the implementation of European Union / EEA projects	NO	NO	YES
Funds transferred by the local government	NO	NO	YES
Research grants	NO	NO	YES
Other (additional) sources	NO	NO	the Ministry of Health and the NHF funds

Source: Own elaboration.

Table 6. Health care system entities consulted by the hospitals during the assessment of innovative medical technologies

Health care system entities	Ujastek Hospital	Brothers Hospitallers of Saint John of God Hospital LLC	University Hospital
the AOTMiT (HTA Agency)	NO	NO	NO
the NHF	NO	NO	YES
the Ministry of Health	NO	NO	YES
the Medical Research Agency	NO	NO	NO
Patient's associations and organisations	NO	NO	NO
Medical technology manufacturers or producer organisations	NO	NO	YES
Scientific societies	NO	NO	NO
Medical chambers	NO	NO	NO
Provincial consultants	YES	NO	NO
National medical consultants	NO	NO	NO
Other hospitals	YES	NO	NO

Source: Own elaboration.

All three surveyed hospitals analyse the financial impact of their implementation when assessing innovative medical technologies. Only one hospital investigates whether the innovation has been implemented in other hospitals in Poland, and another investigates its use in other countries. Two hospitals analyse the financing method of implemented innovation. All the analysed information is summed up in Table 7.

One hospital prepares a report on the assessment of implemented innovative medical technologies.

Two of the hospitals evaluate the effects of their implementation once it has been carried out (see Table 8).

The effective use of limited resources in the health care system is crucial for the proper functioning of the entire system. Policymakers often ask themselves how to reduce these already scarce resources without losing the quality of the provided services. One method that can help reduce financial resources is HTA performed at the hospital level. It is worth emphasising once again that

Table 7. Information analysed during the assessment of innovative medical technologies

<b>Analysed information</b>	<b>Ujastek Hospital</b>	<b>Brothers Hospitallers of Saint John of God Hospital LLC</b>	<b>University Hospital</b>
Implementation of innovations in other hospitals in Poland	NO	YES	NO
Implementation of innovations in other countries	YES	NO	NO
The financial effect of the implemented innovation	YES	YES	YES
The method of financing the implemented innovation	YES	NO	YES

Source: Own elaboration.

Table 8. Report on the assessment of the implemented innovative medical technologies and the evaluation of the effects of their implementation in the surveyed hospitals

<b>Is the hospital developing...</b>	<b>Ujastek Hospital</b>	<b>Brothers Hospitallers of Saint John of God Hospital LLC</b>	<b>University Hospital</b>
an assessment report?	NO	YES	NO
the evaluation of the effects of the implementation?	YES	YES	NO

Source: Own elaboration.

hospitals are the entry point for new medical technologies. Therefore, HTA analyses should be tailored to specific hospital conditions. HB-HTA helps managers make the right decision about implementing the most effective and profitable innovative medical technologies (Martelli et al., 2016). International reports of HB-HTA indicate the improvement of the implementation of new technologies in hospitals as well as the reduction of the costs associated with this investment (Granados et al., 2000).

As already mentioned, there are currently no hospital units for HTA in Poland, but in the era of rapid technological progress, especially in the field of medicine, hospitals are increasingly implementing new medical technologies. Therefore, they have already developed certain criteria that they use when making decisions about implementing innovations. These criteria are usually not systematised in any way and are mainly based on the experience, skills, and intuition of hospital management. The hospitals surveyed in the pilot

study also did not mention the creation of a separate unit responsible for HTA processes.

A study in Spain found the following obstacles for the establishment of HB-HTA: a wrong hospital strategy for the exploitation of assessment results; the lack of departments dedicated to the assessment, supervision, and quality control of Health Technology Assessment reports; technologies are not reassessed after licensing; the recovery of technology costs is not possible; resistance of hospital specialists to change and the need to raise their technical knowledge on HTA; inaccessibility of scientific resources; and physical and spatial constraints. The Spanish study's recommendation towards reducing the aforementioned problems involved: establishing an association for monitoring the HTA process; training personnel; making the use of technology assessments mandatory by putting down clear rules to help the decision-making process; and putting down rules which require the existence of assessment reports for every health technology which seeks a licence

to enter the hospitals (Mohtasham, Majdzadeh, & Jamshidi, 2017).

In the HB-HTA process, it is important to create final reports on the assessment of implemented innovative medical technologies. Reports of this type were prepared by one the analysed hospitals. However, after the implementation of innovative medical technologies, the evaluation of the effects of their implementation was carried out in two of the surveyed hospitals.

The surveyed hospitals show great potential – be it larger or smaller – for the implementation of formal HB-HTA processes. Some elements of the HTA process had already been formalised and structured therein. However, there are many elements that need to be refined and applied whenever an innovative medical technology is considered in a hospital. It is important for hospitals to recognize both the need for and the benefits of structured assessment processes.

Two currently implemented initiatives can certainly contribute to this: firstly, the aforementioned research and implementation project of the Hospital Assessment of Innovative Medical Technologies in Poland (HB-HTA-PL), financed by the National Centre for Research and Development (NCBiR) under the GOSPOSTRATEG path (Kowalska-Bobko et al., 2020).

Secondly, the Operational Programme Knowledge, Education, and Development (POWER) 2014–2020, action 5.2 advocates pro-quality actions and organisational solutions in the health care system facilitating access to inexpensive, sustainable, and high-quality health services (Ministerstwo Zdrowia, 2018). As part of the POWER Programme, the following project is carried out: “Effective medical facility. Training programme for administrative and management employees to improve quality in health care”. The aim of this project is to improve the competencies of 130 administrative and management employees of medical entities, payer representatives (NFZ), and medical staff, as well as representatives of founding bodies of medical entities in the context of the proper functioning of the health care system in the field

of HB-HTA. These tasks will be carried out as part of full-time and postgraduate studies conducted by the Institute of Public Health of the Collegium Medicum of the Jagiellonian University. The implementation of the project will supplement the medical education of management staff and the experience acquired through seniority, which will improve the quality and effectiveness of services provided by medical entities. Such programmes should contribute to human resource development in shaping HB-HTA in healthcare facilities, as well as they should result in understanding hospital health technology as a tool to improve management techniques made by managers and stakeholders.

Among European HB-HTA projects, the most important one was the AdHopHTA project (Adopting Hospital-Based Health Technology Assessment), which collected information on hospital units in selected European countries (Austria, Denmark, Estonia, Finland, France Italy, Norway, Spain, Sweden, Switzerland, Turkey). The knowledge gained under the project was aimed at disseminating the values of economic and organisational analyses. The educational value was significant to these activities, as it was about indicating the benefits of implementing hospital health technology assessment. The task of that work was also to create the HB-HTA environment at the appropriate level (Sampietro-Colom et al., 2015).

## Concluding remarks

The results of the conducted study allows for the following conclusions. Firstly, hospitals that participated in the pilot study defined innovative medical technologies and the process of their implementation in a correct way. New technologies were implemented in each of the analysed hospitals. In all three hospitals, technologies were implemented in the therapeutic area, and in one hospital also in the area of diagnostic procedures and organisational systems supporting the provision of health services. The person applying for the implementation of the new technology was the head of the department, a medical worker with

the status of a manager, or an expert. Applications for the implementation of innovative medical technology were considered by hospital directors or, in the case of one hospital, by an organisational unit that dealt with such applications. In one hospital (the University Hospital in Kraków), a template of an application for the implementation of innovative medical technologies was developed and an internal regulation for processing the applications was introduced. The examined hospitals did not have separate units or teams responsible for conducting HTA. It is possible to implement formalised HB-HTA processes in the analysed hospitals, but it will require broadening the knowledge of hospital managers in this area.

One limitations of the study is a small group of the respondents and the online form of the study. In-depth interviews with hospital managers instead of online surveys could add value to the research. Further, the drawn conclusions concerned three hospitals located nearby one another. This may not allow for accuracy when assessing the implementation of HB-HTA nationwide. An increase in the number of institutions participating in the study should be taken into account. It would be useful to broaden the study group to a dozen facilities from different regions and cities. The research should really be based on statistical features, as making conclusions based on statistical methods would have been more beneficial, because more information would have been revealed. However, using statistical methods was impossible at this time due to the small number of the respondents, hence the qualitative and descriptive character of the study. We therefore prescribe an attitude to health technologies evaluation which does not involve qualitative analyses of the current approach to innovations assessment. As researchers, we agree that a further study with more methodological tools will provide more information with concrete guidelines for health care actors and hospital managers.

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## Appendix

Survey title:

*The Implementation of Medical Technologies in Selected Areas in the Commune of Kraków*

### GENERAL INFORMATION

1. The questionnaire was prepared on the basis of the project “Implementation of the Hospital-Based HTA (HB-HTA) – Hospital Assessment of Innovative Medical Technologies”, co-financed by the National Centre for Research and Development under the Strategic Programme of Scientific Research and Development “Social and economic development of Poland in the conditions of globalising markets” (GOSPOSTRATEG).
2. The survey is dedicated to hospitals operating in the area of the Kraków municipality. The hospitals were selected so that they differ in their legal form (independent / public health care institution / commercial companies) and the creating authority/owner.
3. The aim of the survey is to obtain knowledge about the methods and criteria for implementing innovative medical technologies by hospitals.

## INSTRUCTION

1. Due to the content of the survey questions, please fill in the questionnaire with the director of the hospital or a person authorised by them.
2. The survey consists of single-choice or multiple-choice questions and open-ended questions. For each question, the method of answering was indicated (*one answer to choose / one or more answers to choose from / open-ended question*).
3. The questions concern events related only to the implementation of innovative medical technologies in the last five years, i.e. from 2014 until the questionnaire was completed.
4. The survey concerns only innovations related to the provision of health care services. In the case of the purchase of medical equipment, the innovation IS NOT the purchase of equipment with similar or similar parameters (e.g. a purchase made due to the need to replace used equipment).
5. It takes about 10 minutes to complete the survey.
6. The survey consists of 16 questions.

## DATA PROCESSING AGREEMENT

*A lack of consent to data processing makes it impossible to complete the survey.*

Acting pursuant to Art. 6 sec. 1 lit. a Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April, 2016, on the protection of individuals with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46 / EC (General Data Protection Regulation) (Journal of Laws UE. L 2016 No. 119, p. 1) in connection with Art. 12 sec. 1 of the Act of February 21, 2019, amending the Act on health care benefits financed from public funds and certain other acts (Journal of Laws of 2019, item 399), I consent to the collection and processing of the following data for the purposes of the research:

- basic information about the hospital;
- data on the unit responsible for implementing innovative medical technologies in the hospital.

*[one answer to choose]*

- Yes, I consent to the collection and processing of the above-mentioned data;
- I do not consent to the collection and processing of the above-mentioned data and I refuse to participate in the study.

## BASIC INFORMATION ABOUT THE SURVEY

Pursuant to the Act of 27 August, 2004, on health care services financed from public funds (i.e. Journal of Laws of 2018, item 1510 as amended), medical technology includes: drugs, devices, diagnostic and therapeutic procedures used in specific indications, as well as organisational support systems within which health services are performed.

According to the definition of the Oslo Manual 2018, an innovation is: a new or improved product or process (or a combination thereof) that differs significantly from the previous products or processes of the unit – the hospital – and which has been made available to potential users (product) or put into use by the unit (process).

For the purposes of the survey, medical technologies were divided into three groups: diagnostic procedures, therapeutic procedures, and organisational systems supporting the provision of services.

## I. SURVEY QUESTION

Hospital name: .....



1. According to you, the implementation of innovative medical technology can be defined as:

*[one answer to choose]*

- the introduction of new medical technologies or fundamentally changed methods of providing services, resulting in better availability and quality of health services
- developing new medical technologies or improving the existing technologies in order to solve a health problem, increase the efficiency of provided services, reach new groups of patients, increase the efficiency of spending public funds
- other – please provide your own definition of innovation .....

2. According to you, innovative medical technology is:

*[one or more answers to choose]*

- new or significantly improved technology that was used for the first time in a given hospital
- new or significantly improved technology that was used for the first time on the domestic market
- new or significantly improved technology that was used for the first time on a foreign market
- other:.....

## II. INNOVATIONS IN THE AREA OF DIAGNOSTIC PROCEDURES, THERAPEUTIC PROCEDURES AND ORGANISATIONAL SYSTEMS SUPPORTING SERVICES

The questions in this part of the survey concern the implementation of new or substantially changed (improved) medical technologies in the area of diagnostic procedures, therapeutic procedures, and organisational systems supporting the provision of services.

3. In which of the areas are innovative medical technologies implemented in the hospital?

*[one or more answers to choose]*

- in the area of diagnostic procedures
- in the area of therapeutic procedures
- in the area of organisational systems supporting the provision of benefits
- innovative medical technologies are not implemented in the hospital

(NOTE: If you chose the LAST answer, please go to question no. 15)

4. Who is applying for the implementation of innovative medical technologies?

*[one or more answers to choose]*

- a hospital employee (please indicate the official position) .....
- the founding body
- an external company
- other (please specify): .....

5. Who considers applications for the implementation of innovative medical technologies?

*[one or more answers to choose]*

- an organisational unit that examines applications for the implementation of innovations
- various organisational units (please list which): .....
- the director of the hospital
- other (please specify): .....

6. Who ultimately makes the decision to implement or reject innovative medical technologies?

*[one or more answers to choose]*

- the director of the hospital
- a team set up for this purpose specifically
- the founding body
- other (please specify): .....

7. Has a template application for implementation of innovative medical technologies been developed in the hospital?

*[one answer to choose]*

- Yes.
- No.

8. Has the hospital developed a formal path for examining an application for the implementation of innovative medical technologies?

*[one answer to choose]*

- Yes – an internal regulation has been introduced, pursuant to which the application for the implementation of innovation is processed.
- No – examination of the application for innovation has not been regulated.

9. What are the sources of financing innovative medical technologies?

*[one or more answers to choose]*

- the hospital's own funds
- funds obtained under the implementation of European Union / EEA projects
- funds transferred by the local government
- research grants
- other (please specify): .....

10. Please enumerate the innovative medical technologies that have been considered in the hospital over the last five years.

*[open answer]*

.....  
.....

11. When assessing innovative medical technologies, does the hospital consult:

*[one or more answers to choose]*

- the Agency for Health Technology Assessment and Tariffs
- the National Health Fund
- the Ministry of Health
- the Medical Research Agency
- patient associations and organisations
- manufacturers of medical technologies (e.g. medical equipment, drugs) or producer organisations
- scientific societies
- chambers for associating medical professions
- provincial consultants
- national consultants
- other hospitals
- other: .....
- Not applicable – the hospital does not conduct consultations.

12. When assessing innovative medical technologies, does the hospital analyse:

*[one or more answers to choose]*

- whether the innovation was implemented in other hospitals in Poland
- whether the innovation was implemented in other countries
- what the financial effect of implementing the innovation will be
- what the method of financing the implemented innovation will be
- other: .....

13. Is there a report on the evaluation of implemented innovative medical technologies?

*[one answer to choose]*

- Yes.
- No.

14. After the implementation of innovative medical technologies, is there an evaluation of the effects of the implementation?

*[one answer to choose]*

- Yes.
- No.

15. Why is the hospital not implementing innovative medical technologies?

*[one or more answers to choose]*

- no need to implement innovation
- the lack of financial resources
- the lack of human resources
- the lack of knowledge about how to implement innovations
- the lack of knowledge about innovations that can be implemented
- the existence of legislative barriers
- other (please specify): .....

16. Comments to the survey:

*[open question]*

.....

*Thank you for your participation in the survey.*

Michał Kudłacz, Anna Karwińska

## The Specificity of Urban Sprawl in Poland: The Spatial, Social, and Economic Perspectives

### Abstract

*Objectives:* The purpose of this article is to show and highlight the selected development-related trends of urban areas in Poland, with particular emphasis put on the phenomena that constitute urban sprawl, and taking into consideration historical aspects of the urban sprawl.

*Research Design & Methods:* The object of the study was Poland. The important base of the analysis was the historical evolution of the urban sprawl in Poland. The main research method is a comparative analysis based on historical examples in order to show the “roots” of the development processes of the urban sprawl in Poland as well as their characteristic features.

*Findings:* As a result of the research, the authors have determined that the Polish urban sprawl is specific and results from historical changes, the mentality of Polish people, economic processes, and legal conditions (too liberal laws on spatial planning).

*Contribution / Value Added:* This research adds to knowledge about the circumstances of the phenomenon of the urban sprawl in Poland, its evolution, and – above all – the degree of the individualisation of the causes and consequences of the Polish urban sprawl, which will allow decision-makers to adopt appropriate tools to support local development.

*Implications / Recommendations:* Polish urban sprawl is specific due to the high degree of suburban urban chaos (disorganised, spontaneous development), which has negative economic, social, and environmental consequences. In connection with the consequences of urban sprawl, action should be two-fold: on the one hand, it is about organising stretched suburban areas, giving them new spatial, social, cultural, and economic values. Here, an important role is played by spatial and social planning: the search for axes crystallising the organisation of space, i.e. places around which development could concentrate, creating more focused and ordered areas. There is also a need for centres of social concentration that could create centres of social life. This role could be played by cultural institutions (e.g. libraries), educational institutions, or religious institutions. On the other hand, it is necessary to create conditions for a ‘return to the cities’ for those whose life situation has changed, e.g. if their children are of legal age and independent, or who grew up in the suburbs. The latter is very complex. It would be difficult to identify existing cities that have ‘recovered’ their inhabitants from suburban areas on a large scale. Infrastructural preparation is needed, i.e. some sort of the rebuilding of cities, especially their centres. What is needed is the development of services and recreational spaces as well as the creation of new opportunities and possibilities.

*Keywords:* urban sprawl, metropolitan area, spatial planning in Poland, urban development policy

*Article classification:* research article

*JEL classification:* R1-1, R5-2, R5-8

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**Anna Karwińska (Professor)** – Cracow University of Economics, Faculty of Public Economy and Administration, Department of Sociology, ul. Rakowicka 27, 31-510, Kraków; e-mail: [anna.karwinska@uek.krakow.pl](mailto:anna.karwinska@uek.krakow.pl); ORCID: 0000-0002-0716-8565. **Michał Kudłacz, PhD** – Cracow University of Economics, Faculty of Public Economy and Administration, Department of Public Policies; ul. Rakowicka 27, 31-510, Kraków; e-mail: [michal.kudlacz@uek.krakow.pl](mailto:michal.kudlacz@uek.krakow.pl); ORCID: 0000-0001-6746-4182.

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## Acknowledgments

*Special thanks to Professor Aleksander Böhm for his significant substantive input and invaluable help, without which this article would not have been created.*

## Introduction

One of the most important contemporary spatial processes which affects the economic and social spheres is the so-called amorphous growth of the cities (urban sprawl). When characterising this process, it should be noted that it relates to an uncontrolled (by the authorities) drain of the social, economic, and cultural resources from the city core towards its surroundings which does not belong to the city in the administrative sense. This is a negative phenomenon from the point of view of a metropolis' authorities and it weakens the quality potential, including the financial quality, of a city centre. The purpose of this article is to show and highlight the selected development-related trends of urban areas in Poland, with particular emphasis put on the phenomena that constitute the urban sprawl. The authors' intention is to present the specificity of the Polish urban sprawl by means of referring to certain traditions (both at the conceptual level and at the practical-actions level) in spatial planning, the functioning of the society, and economy. Our thesis here is that, paradoxically, urban sprawl should not be given an unequivocally negative assessment, as it provides a response to important social needs and aspirations which, due to political and cultural circumstances, could not be met otherwise. Another significant thesis stated in this article concerns the main reason of the "Polish" urban sprawl, which – in the authors' opinion – is the passiveness and sometimes also helplessness of authorities on all levels. This is related to the particularity of interests and the lack of collaboration and coordination of actions both on the vertical plane and on the horizontal plane.

An important element of this article is to underline the likely consequences of the urban

sprawl for the social, economic, environmental, and cultural potential of these systems in Poland. The paper is, to a large extent, of a theoretical nature; it is an attempt to answer questions about the causes of the amorphous sprawl as well as about the scope of the impact of this process on the potential of urbanized centers.

The first part of the article is a historical analysis of the phenomenon of urban sprawl, with particular emphasis put on its evolution process and the way of understanding the suburban space along with the way of its development. In the second part, the authors analyse the problem of the urban sprawl in contemporary Poland. The Polish urban sprawl has a number of characteristic features resulting from the legal framework and the historical conditions alike. The whole analysis ends with a relevant conclusion.

## The outline of the history of urban sprawl in Poland

Urban sprawl can be defined as a 'cultural response' to specific needs and aspirations of various social groups. Forming the wealthier strata of society, the middle class is looking for new opportunities to pursue their aspirations and, to some extent, the processes of suburbanisation that are associated with these new social expectations.

However, it should be noted that the real living conditions in the suburban areas still do not meet those high expectations. Also important is the fact that Poland is going through a period of "acute crisis" in planning; therefore, it is difficult to carry out important tasks in order to reconcile the interests of different groups of residents and users of different areas as well as deliver space to reconcile the different development, economic, social, and environmental goals (Radziejowski, 2002, p. 20).

Thus, in Poland, one of the causes of urban sprawl development is the spatial chaos caused by the lack of control and coordination of development planning. It is primarily due to the lack of a good law and some kind of social culture and tradition

space management in Poland since the Middle Ages (Kudłacz, 2016, p. 249).

In Poland – in contrast to English-speaking countries – this type of landscape degradation which we refer to as sprawl does not have its fixed beginning, which is an answer to the question: when did it start? Most often it is said that in the recent past – perhaps at most dating back to the time of post-war illegal building or the so-called “spontaneous urbanism”. In fact, however, it is a process of much older roots, reaching the Middle Ages. As Henryk Samsonowicz (1970) has pointed out, municipalities that received municipal rights often closed access to offices or professions for newcomers. This resulted in the formation of new centres, often poorer and not fortified, sometimes cooperating with the municipality, sometimes remaining in opposition (Samsonowicz, 1970, p. 39).

Against the backdrop of modern European urban planning, especially in regions such as England, Northern Italy, the Netherlands, or supra-regional network of Hanseatic cities, Polish cities were economically weak and underdeveloped in terms of urban planning. From the 17th century, the rejection of urban culture typical of Western Europe in favour of the return of feudal relations (the return of a grange) became more pronounced. The deepening incapacitation of urban administration and the development of privileges of the nobility and the church – and then of the so-called *jurydyki*, i.e. areas that were not subject to the laws of the city and did not pay taxes – badly affected the condition of the cities. They made the body of the city barren from the inside and disrupted its development from the outside. The scale of this phenomenon is illustrated by the fact that in the 17th century in Kraków alone, on the municipal grounds, 20 new monasteries were established. In the era of elected kings, the nobility led to the enactment of an anti-burgess legislation, namely, among other things: the prohibition of lease of land in 1538, an attempt to liquidate guilds in 1538 and 1552, or a ban on practising active international trade

for the Polish merchants in 1565. As a result of these measures and of the deepening atmosphere of dislike for the middle class and urban life, city autonomy was severely restricted (*Encyklopedia Historii Gospodarczej...*, 1981, p. 525). The resource of contemporary urban structures depleted qualitatively and quantitatively, and was only complemented by not very successful – with the exception of Zamość and later of Rydzyna – private towns and a completely botched action of colonisation of the Borderlands in the 17th century.

The suburban or rural character of a quasi-urban space – i.e. of sprawl back then – was the result of two different processes: suburbanisation and ex-urbanisation. They are as old as city itself, but stronger under the Polish conditions (Figure 1).

The Polish native urban form in the 18th century was generally tightly “porous”, i.e. not yet finished and already deformed. Dim clarity and the blurring of boundaries were usually accompanied by a small-scale building, often one

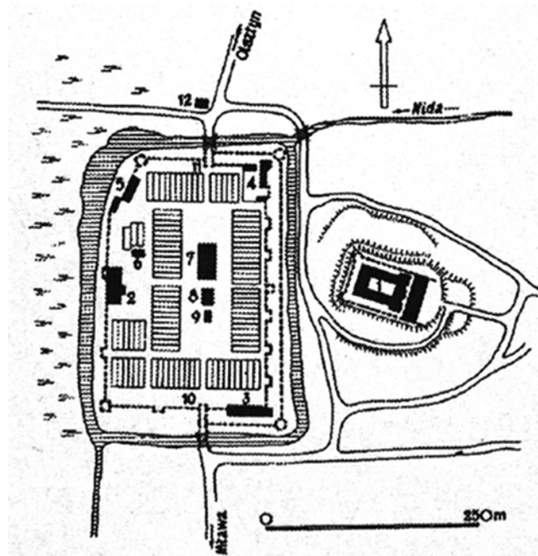


Figure 1. Nidzica – an example of a city founded by the Teutonic Knights

Source: *Zabytki urbanistyki i architektury w Polsce. Odbudowa i konserwacja, Tom 1. Miasta historyczne* (1986) (cited in Kudłacz & Hausner, 2017, p. 35).