

THE RELATIONS OF THE HEALTH CENTERS OF THE SOUTHERN PART OF THE GREAT HUNGARIAN PLAIN

BY

I. PÉNZES-J. TÓTH-D. BÉLA

The Hierarchy of public Health Institutions

According to the evidence of statistical yearbooks the health service of this country holds a distinguished place even in comparison with other, economically much more highly developed countries. In spite of the favorable statistical indexes we find that the public health institutions of the country are overcrowded and those employed to cure the sick are overburdened. The clinics and hospitals of the towns of the southern Great Plain can admit patients only in case of immediate danger of life, i. e. on an urgency basis and during the period of treatment cannot ensure full rest for those in need of it on account of the above-mentioned facts. Of course not all of our hospitals are struggling with such problems, but the current situation is causing great trouble to the central establishments.

Very many factors have contributed in recent years to the development of the current difficult situation. Among others the basically favorable fact itself, that today nearly everybody in this country is ensured and thus hospital treatment is now available to everybody and the fact that owing to the accelerated life tempo of our age the so-called civilizational and urbanizational diseases oblige more and more people to take advantage of hospital treatment.

In the course of an earlier survey of the public health conditions of Szeged we came to the conclusion that the hospitals of the town ensure medical care not only for the population living here, but exert attraction of greater or lesser intensity also on the population of the whole of Csongrád county and the population of the neighboring Bács and Békés counties as well. From data collected in 1967 we established that the public health care attraction of the town of Szeged is not confined to the territory of the counties in the southern part of the Great Plain, but it extends even over the south-western part of Szolnok county and the northern part of Bácska county. Therefore, in the course of the survey of 1968, the Department of Economic Geography of Attila József University collected the data of all the public health establishments of the three most intensively attracted counties in order to precise the primary area boundaries and hierarchy of the centers of attraction and the inter-relations of the patient-supplying areas.

Owing to the fact that they often serve special purposes the different health service establishment play different roles in medical treatment, which produces differences not only between establishments of different kinds but also of them within the same category and can be seen

with difficulty or not at all from the numerical data. Thus between certain categories a distinction can be made at the most only on the basis of experience (e. g. on the basis of the degree of severity of the disease), the factual proving of which is very difficult. Taking these things into account we classified these health service establishments into three categories. Distinction between hospitals and clinics was the easiest. The task of the first is medical treatment, the task of the latter is besides this teaching and research activity. Therefore we put the clinics on account of their function on a higher level into category I, consequently the hospitals into category II, and finally the maternity homes into category III.

TBC and other sanitaria aswell as special — purpose hospitals on account of their special tasks — were also put in category I.

The greatest difference in attraction is seen between the hospitals and the maternity homes. The difference in the attraction of the clinics and hospitals appears chiefly in the secondary and tertiary spheres of attraction and in the different numbers of patients coming from outside their areas.

The differences depend on the number and types of departments in the given hospitals, the equipment of the establishments, the number of beds, etc. The better the equipment of a hospital, the more it approaches the clinical level in its medical treatment.

The spread of the primary attraction spheres of the hospitals also depends to a great extent on their legal status.

The sphere of attraction of the county hospitals is generally wider than that of the city hospitals or hospitals of other legal status. Here the relation between cause and effect is very simple. The county hospitals generally function in the county towns, that is in principle the largest settlements of the counties, which again means on the one hand the presence of highly qualified doctors, as the hospitals of the larger towns drain away the bettertrained, more experienced specialists from the hospitals of the smaller settlements, on the other hand it means better and more modern equipment. If a county hospital of the southern Great Plain functions elsewhere than in the chief town of the county on account of administrative regulations (as in Csongrád and Békés counties), its power of attraction shows a strong connection with the degree of urban character of the seat of the hospital.

The difference between categories II and III (hospitals and maternity homes) is so essential that the latter cannot form an attraction sphere against the hospitals. Owing to their more one-sided task (their activity being limited to assistance in deliveries) they are linked with one or another hospital. Only those maternity homes form an exception whose geographical location (owing to the distances) necessarily imposes independence on these establishments. There are two such maternity homes in the southern Great Plain: that of Szeghalom and that of Medgyesegyháza.

Those treated in the maternity homes cannot be considered patients, because we cannot speak of sick-nursing or medical treatment here, as in

case of complications in childbirth or abortion the hospitals or clinics or other special nursing establishments of the district take care of the female patients.

In the cases of delivery in the clinics and hospitals, however, the complicated cases cannot be filtered out from the general. In principle only gynecological cases are admitted to the clinics. At the central establishments, however, the maternity hospitals and maternity wards perform the duties of maternity homes. This role is more prominent in the hospitals than in the clinics.

The Territorial Relations of the Public Health Institutions

A) There are altogether 48 sanitary establishments in the southern Great Plain where 226,275 patients were attended to in 1968.

On the basis of statistical and cartographic survey and evaluation of the data connected with this, the situation can be summarized as follows:

The largest number of patients were attended by the sanitary establishments of Csongrád county, the smallest number by the sanitary establishments of Békés county:

1. There are no clinics in Bács and Békés counties, so the number of those attended and belonging to category 1 is very small in these counties.

a) In *Bács county* there are only two special TBC sanitarium in which altogether 243 patients were attended in 1968.

b) In *Békés county* the situation is similar. There is a TBC sanitarium at Szeghalom and at Attila József settlement belonging to Gyula. These sanitarium especially that of Gyula treat more patients than those of Bács county. In 1968, 1234 patients were treated in these establishments.

c) *Csongrád county* holds a special, prominent place not only in the southern Great Plain but also on a national level in respect of clinics and special establishments.

There are in

Szeged

11 clinics

1 children's hospital

Deszk

a TBC sanitarium

Kútvolgy and

a TBC bone TBC

Kakasszék

sanitarium

In the establishments of the first category of Csongrád county 25,055 patients were attended in 1968 without the data of the obstetrical clinic, that is more than 30 per cent (30.36 per cent) of the total number of patients attended in the county.

2. The three counties have a roughly equal number of hospitals (category II). In Csongrád county there are 5 hospitals in Bács county 5,

and in Békés county 4. These sanitary establishments are located in 13 settlements. (In Szeged there are 2 hospitals).

a) Not counting the patients of the obstetrical departments, in 1968, the most patients were attended in the hospitals of Csongrád county, the fewest in the hospitals of Békés county.

We have already mentioned in the introduction that parturition and abortion cannot be classed with the other diseases; therefore we evaluated the patients of the obstetrical clinic and of the obstetrical departments of the hospitals separately in the comparative statistics.

3. The role of maternity homes, which are classed in category III, is the most important in Békés county.

a) In this county there are 8 maternity homes. (The one of Medgyesyháza even has a health service district). In 1968 23,757 persons were treated at the obstetrical departments of the hospitals and in the maternity homes of the county. Of these 8,014 persons that is 38.14 per cent of all the child-births and abortions were attended in the maternity homes.

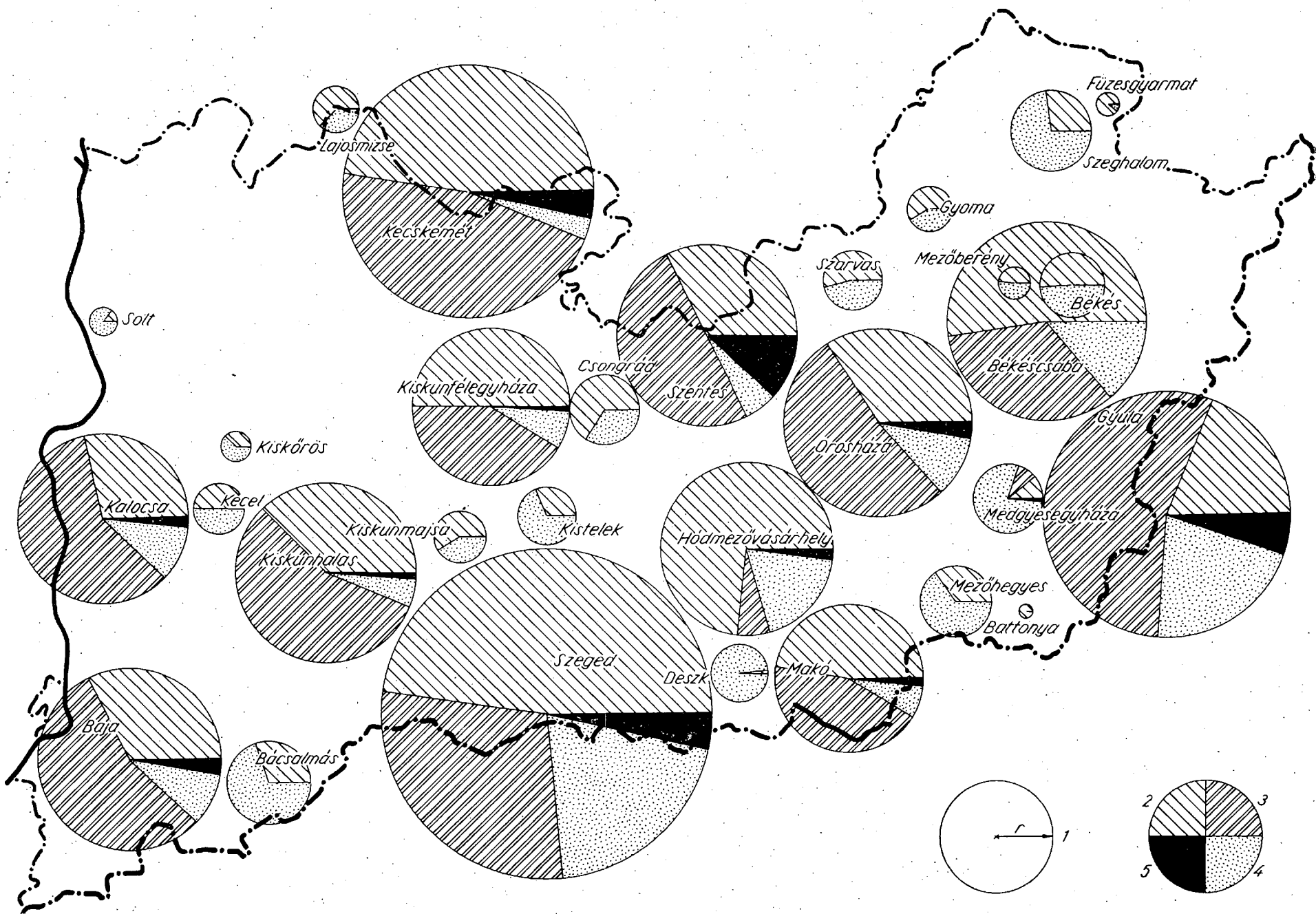
b) None of the five maternity homes in Bács county has a district-forming role, because all of them are overshadowed by hospitals. In these maternity homes 3,915 persons were attended in 1968, that is 12.07 per cent of all patients.

c) In Csongrád county (in Kistelek and Csongrád) there are maternity homes, in which 2,732 persons, i. e. 10.96 per cent of all the obstetrical patients were attended in 1968.

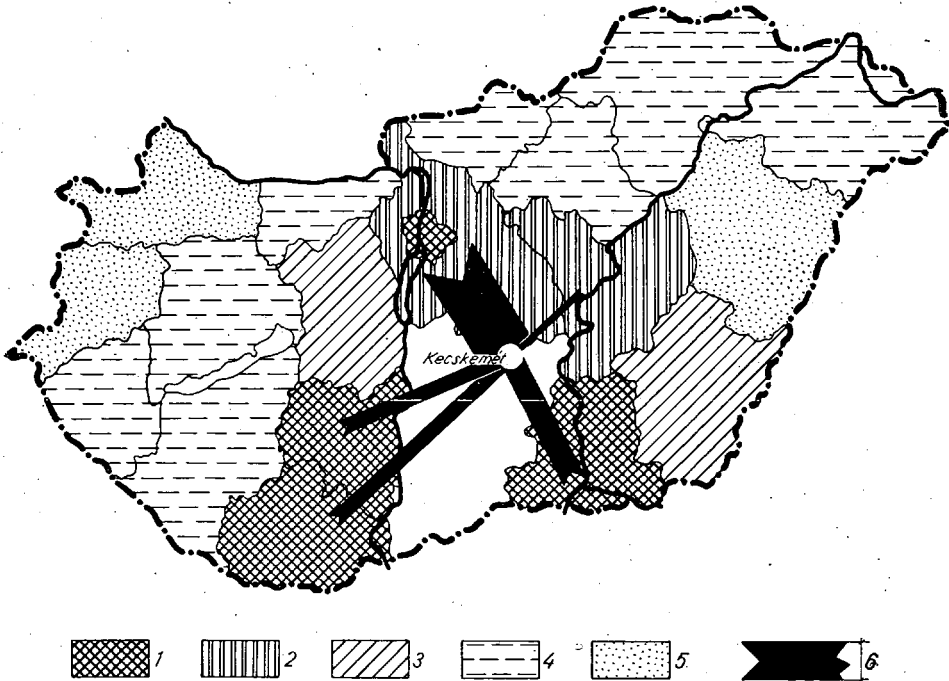
d) The distribution between categories I and II of the obstetrical cases attended outside the maternity homes is characteristic only in Csongrád county. Here the distribution of the patients between the two types of institutions, the obstetrical clinic in Szeged and the obstetrical departments of the hospitals, in approximately 50—50 per cent. (This means that the obstetrical clinic was obliged to organize itself for large-scale assistance at childbirth, which is a very different thing from its original destination.)

The distribution of the patients according to the groups of establishments and the counties is shown in *Table 1*, while the total number of patients attended at the health institutions of the 30 settlements of the southern Great Plain as well as the ratio of patients from the same places, from the districts, from the areas beyond the respective districts, from the counties of the southern Great Plain, and from other counties is shown in *Fig. 1*.

B) In 1968 5,371 persons from the counties neighboring on the district and from remoter areas of the country were treated in the public health institutions of the southern Great Plain. Relatively important is also the number of patients from abroad. There were 569 patients from Yugoslavia and 105 patients from other countries. The intensity of the attraction of the health institutions of the southern Great Plain is shown in *Figs. 2, 3, 4, 5 and in Table 2*. In the preparation of the figures the



1. The number of patients attended in the sanitary centers of the southern Great Plain.
1. $r = 5,000$ persons
2. Local patients attended from the sanitary center.
3. Patients attended from the sanitary district.
4. Patients attended from the area of the southern Great Plain.
5. Patients attended from outside the area of the southern Great Plain.



2. The nationwide attraction of the sanitary establishments of Bács-Kiskun county. The intensity of attraction on the basis of the number of patients per 10,000 inhabitants.

1. above 4.0
2. between 4.0—2.0
3. between 2.0—1.0
4. between 1.0—0.5
5. under 0.5
6. = 500 persons

patients treated per 10,000 inhabitants of the attracted county were taken as a basis.

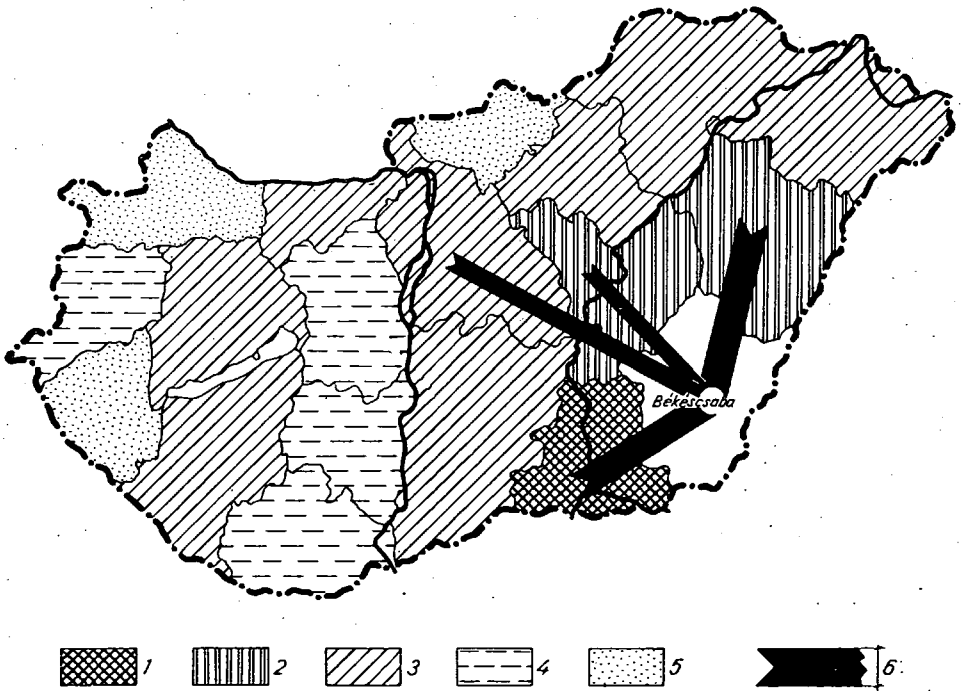
1. According to the data the health institutions of Bács county exercise an attraction of primary intensity on the inhabitants of Csongrád, Tolna and Baranya counties. They have a relatively important effect also on Szolnok and Pest counties and even on Budapest. The health service attraction of Bács and Békés counties is mutual. Bács county attracts Békés county similarly to Fejér county only with third-rate intensity. In Békés county only 15 more persons from Bács county were treated than vice versa. This is the situation in the case of Fejér county, too. The relation with the counties belonging to zones 4 and 5 is so insignificant that it is quite equalized by the opposite attraction.

The situation is different in the case of the relation of Csongrád and Pest counties and the town of Budapest. These counties and the capital attract more patients from Bács county than vice versa. In its relation

with Szolnok the attraction of Bács county is stronger than the other way round. This is still more characteristic in the case of Tolna county. Baranya county is in a situation similar to that of Szolnok county in the mutual attraction relation (Fig. 2.)

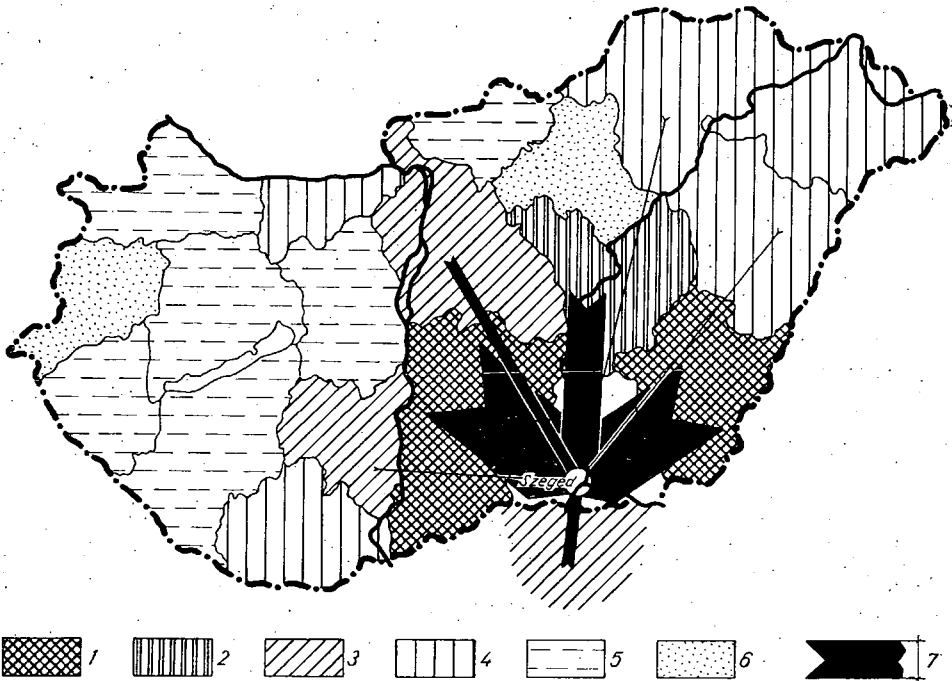
2. Of the three counties of the southern Great Plain Békés county has the weakest health service relations. It exerts active attraction only on the patients of Csongrád, Szolnok and Hajdú counties. Like Bács county it has a rather passive balance in its relation to Csongrád county, while in its relation to Hajdú and Szolnok counties it has a minimal surplus. Its balance can also be considered passive in relation to Pest county or Budapest, while its relations with other counties is occasional, mutually equalized (Fig. 3.).

3. Of the three counties of the southern Great Plain *Csongrád county* is outstanding owing to the central location and regional functions of the town of Szeged. Its attraction exerted on Bács and Békés counties as



3. The nationwide attraction of the sanitary establishments of Békés county. The intensity of attraction on the basis of the number of patients per 10,000 inhabitants.

1. above 5.0
2. between 5.0—1.0
3. between 1.0—0.5
4. between 0.5—0.1
5. under 0.1
6. = 1000 persons.



4. The nationwide attraction of the sanitary establishments of Csongrád county. The intensity of attraction on the basis of the number of patients per 10,000 inhabitants.

- | | |
|------------|--------------|
| 1. above | 50.0 |
| 2. between | 50.0—3.0 |
| 3. between | 3.0—2.0 |
| 4. between | 2.0—1.5 |
| 5. between | 1.5—1.0 |
| 6. under | 1.0 |
| 7. = | 1000 persons |

well as on Bácska county has a strongly positive balance. Szolnok county belongs already to its second sphere although here, too, the influence of Csongrád county is stronger than the other way round. The balance of Csongrád county in relation to Pest and Tolna counties is minimal, but can be said to be positive. In the case of the counties belonging to the fourth sphere the attraction of Csongrád county is stronger, while its relation with the counties belonging to the fifth and sixth spheres can be called mutually equalized although were Szeged is concerned there is some surplus even in this case (Fig. 4.)

4. The combined influence of the southern Great Plain is strongest on Szolnok county. Here, too, Csongrád county must be mentioned in the first place because in the case of Bács and Békés counties there is hardly any surplus. Very imposing is the health service attraction of the southern Great Plain exerted on the inhabitants of Bácska county. Of the

TABLE 1.

*The distribution of patients treated in the different counties and institutions
of the southern Great Plain in 1968*

Institution	Clinics and spec. inst.	Hospitals	Together with- out obstetric dept.	Maternity homes	Obstetric depts.	Total of obstetric patients	Total of all patients
	I.	II.		III.			
Bács county	243	47 011	47 254	3 915	28 510	32 425	76 679
Békés county	1 234	39 180	40 414	8 014	15 643	23 657	64 071
Csongrád county	25 055	32 537	57 592	2 732	22 201	24 933	82 525
Southern Great Plain total	26 542	118 728	145 260	14 661	66 354	81 015	226,275

TABLE 2.

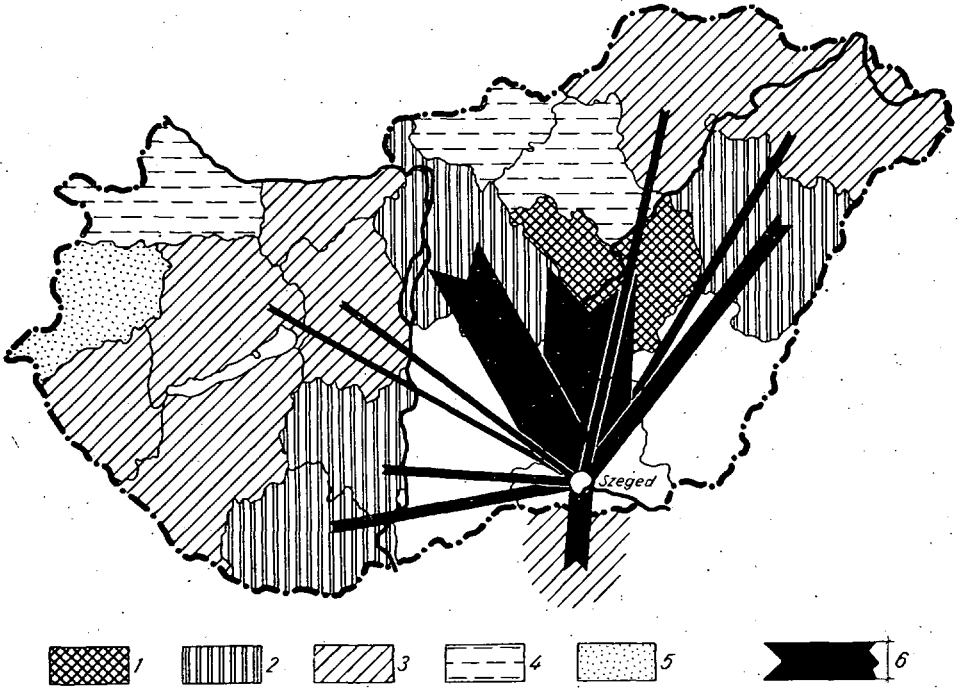
*Relations of the Health Centers of the southern Great Plain within the county
Patients attended in*

From the county of	Bács-Kiskun		Békés		Csongrád		In the southern Great Plain	
	Abs. number	Number per 10,000 inhabitants of the attracted county	Abs. number	Number per 10,000 inhabitants of the attracted county	Abs. number	Number per 10,000 inhabitants of the attracted county	Abs. number	Number per 10,000 inhabitants of the attracted county
Baranya	175	4.1	6	0.1	74	1.7	255	6.1
Borsod	137	0.5	22	0.3	123	1.5	183	2.3
Fejér	57	1.5	5	0.1	54	1.4	116	3.0
Győr	8	0.2	2	0.05	52	1.3	62	1.5
Hajdú	22	0.4	259	4.9	102	1.9	383	6.4
Heves	17	0.5	17	0.5	31	0.9	65	1.9
Komárom	20	0.7	15	0.5	49	1.6	84	2.8
Nógrád	14	0.6	2	0.08	25	1.0	41	1.7
Pest + Bp.	803	2.8	246	0.8	584	2.0	1633	5.7
Somogy	25	0.7	15	0.4	47	1.3	87	2.4
Szabolcs	41	0.7	14	0.25	82	1.5	137	2.5
Szolnok	94	2.1	215	4.8	2001	44.9	2310	51.8
Tolna	177	6.8	4	0.15	73	2.8	254	9.7
Vas	3	0.1	3	0.1	16	0.5	22	0.78
Veszprém	36	0.9	12	0.3	42	1.0	100	2.4
Zala	25	0.9	4	0.15	35	1.3	64	2.4
Békés	30	0.6	—	—	3608	93.6	3638	—
Bács-Kiskun	—	—	45	0.8	4603	76.7	4648	—
Csongrád	576	10.0	672	15.3	—	—	1239	—
From Yugoslavia	19	0.1	3	0.01	547	2.7	569	2.6
From other countries	49	—	18	—	—	—	105	—

neighboring counties Tolna county also gravitates strongly towards the southern Great Plain. The relation of Hajdú and Baranya counties is based on mutuality with a difference of only a few per cent. The balance of Budapest on the other hand is entirely positive. Pest county is equal in the mutual relation. As regards the counties belonging to the third sphere, the southern Great Plain has a positive balance, while its relation to spheres four and five is essentially mutual with minimal advantage for the southern Great Plain (Fig. 5 and Table 2.)

The Public Health Institutions as Sphere-Constituting Elements

A) We have delimited the spheres of attraction of the sanitary establishments on the basis of the percentile quota of patients treated so that the settlements from which more than 50 per cent of the patients were



5. The nationwide attraction of the sanitary establishments of the southern Great Plain. The intensity of attraction on the basis of the number of patients per 10,000 inhabitants.

1. above 51.0
2. between 51.0—5.0
3. between 5.0—2.0
4. between 2.0—1.0
5. under 1.0
6. = 1,000 persons

taken to the sanitary establishments of some other settlement were classed in the sphere of the health center in question.

This method of establishing the limits of the spheres is, in our opinion, one that leads to correct, objective results.

1. The spheres so delimited are in close agreement with the officially delimited areas of public health administration, which is natural because the district doctors may refer patients only to the appointed higher institutions. The doctor may, at the request of the patient and according to the nature of the disease, propose exceptionally admission of the patient to some other institution, but his proposal must be approved by the National Health Service chief doctor, which considerably restricts the individual wishes. In spite of this restriction there is a significant flow of patients toward areas of public health administration in which the conditions of the traffic system, the capacity of the ambulance

service, the momentary fullness of the hospitals or maternity homes and many other factors play a role.

An important factor in orientation may be for example the prestige of the doctor who is the head of the department and specialist of the disease in question or apart from the conditions of the traffic system the distance in the case of settlements in borderline areas.

2. It is the result of the different factors working together that in all three counties of the southern Great Plain there are settlements the patients of which do not gravitate toward any of the spheres on the level of 50 per cent or above it.

a) In Bács county the patients of the villages of Páhi and Soltszentimre for example gravitate toward the center Kécskemét only in 40 to 50 per cent. The rest of the patients are attracted by Kiskunfélegyháza and Kalocsa. Csolyospálos, a village of Bács county at the border of Bács and Csongrád counties belongs to the sphere of Szeged; more than 40 per cent of its inhabitants have themselves treated in Szeged, while the remaining nearly 60 per cent go to the sanitary establishments of Kiskunhalas and Kiskunfélegyháza. Kiskunhalas therefore approaches the percentile value of Szeged.

b) The geographical location of the centers of *Bács county* with sanitary establishments of a higher order is strongly decentric. Gyula and Békéscsaba are located at scarcely 15 km away from each other in the eastern part of the county near the Rumanian border. In the northern and northeastern parts of the county there is no hospital. There is one at Mezőhegyes in its southern part, but even today it has not so strong an influence as the earlier county and municipal hospitals with great traditions.

In the district of Gyula (Szeghalom with a maternity home and a TBC sanitarium), Kertéssziget, Bucsa and Pusztatölkész, *in the district of Békéscsaba* Ecsegfalva, Endrőd, Csárdásszállás, and in the district of Orosháza Szarvas (with a maternity home) Békésszentandrás, Örménykút, Csabacsüd and Kondoros as well as Mezőkovácsháza, Végegyháza, Battonya, Magyarbánhegyes, and Meggyesbodzás gravitate to their center by less than 50 per cent.

The maternity home of Szarvas exercises a second rate attraction on the settlements around it; in consequence of this the hospital of Orosháza cannot attain to 50 per cent of the patients at these settlements. The situation is similar in the southern areas where the hospital of Mezőhegyes attracts more than 50 per cent of the patients of Mezőhegyes alone and its second-rate influence on the five settlements of the neighborhood is so strong, that Orosháza cannot ensure a share of 50 per cent from the patients of the five settlements in question, which is partly also due to the fact that here the influence of Gyula, Békéscsaba, Szeged, Makó and Medgyesegyháza also makes itself felt.

The maternity home of Medgyesegyháza has a peculiar situation among similar institutions in the southern Great Plain. It can be said that a public health district of it has been formed from the inhabitants of Magyarbánhegyes. This maternity home receives more than 40 per

cent of the total number of the patients of the two settlements, but it does not reach 50 per cent. The cause of the development of the separate district is that in percentile distribution of the patients neither Orosháza, nor Gyula, nor Mezőhegyes, nor Békéscsaba attain a 40 per cent share.

The role of the maternity home and TBC sanitarium of Szeghalom is interesting. The women in childbirth at this settlement are more strongly attracted by the hospital of the town of Gyula, while the maternity home of Szeghalom attends the women in childbirth and aborting women of Kertéssziget. In spite of this the attraction of Szeghalom does not reach 50 per cent. The remaining percentage is shared between Gyula and Szeghalom. In consequence of this situation fewer women in childbirth from Kertéssziget are attended in Gyula than in Szeghalom.

c) *In the district of Szeged* in Csongrád county the village of Baks represents the transitional type. The inhabitants living here gravitate rather toward Csongrád and Szentes through the good approach (connecting road of Csanytelek, Csanytelek and Félgyő) also represent transitions *in the district of Szentes* as they belong to the attraction sphere of the maternity home of Csongrád. Really it is these three villages that supply patients to the maternity home of Csongrád.

2. In the southern part of the Great Plain there are 13 primary and 1 secondary districts.

a) As regards the primary districts the largest number of district population is attended by the institutions of Szeged, and the smallest number by the hospital of Medgyesegyháza. After Szeged, Kecskemét, Gyula, Kiskunhalas, and Baja follow on the basis of the number of inhabitants attended. On the basis of the patients attended in the institutions of the district the order is the same as mentioned before.

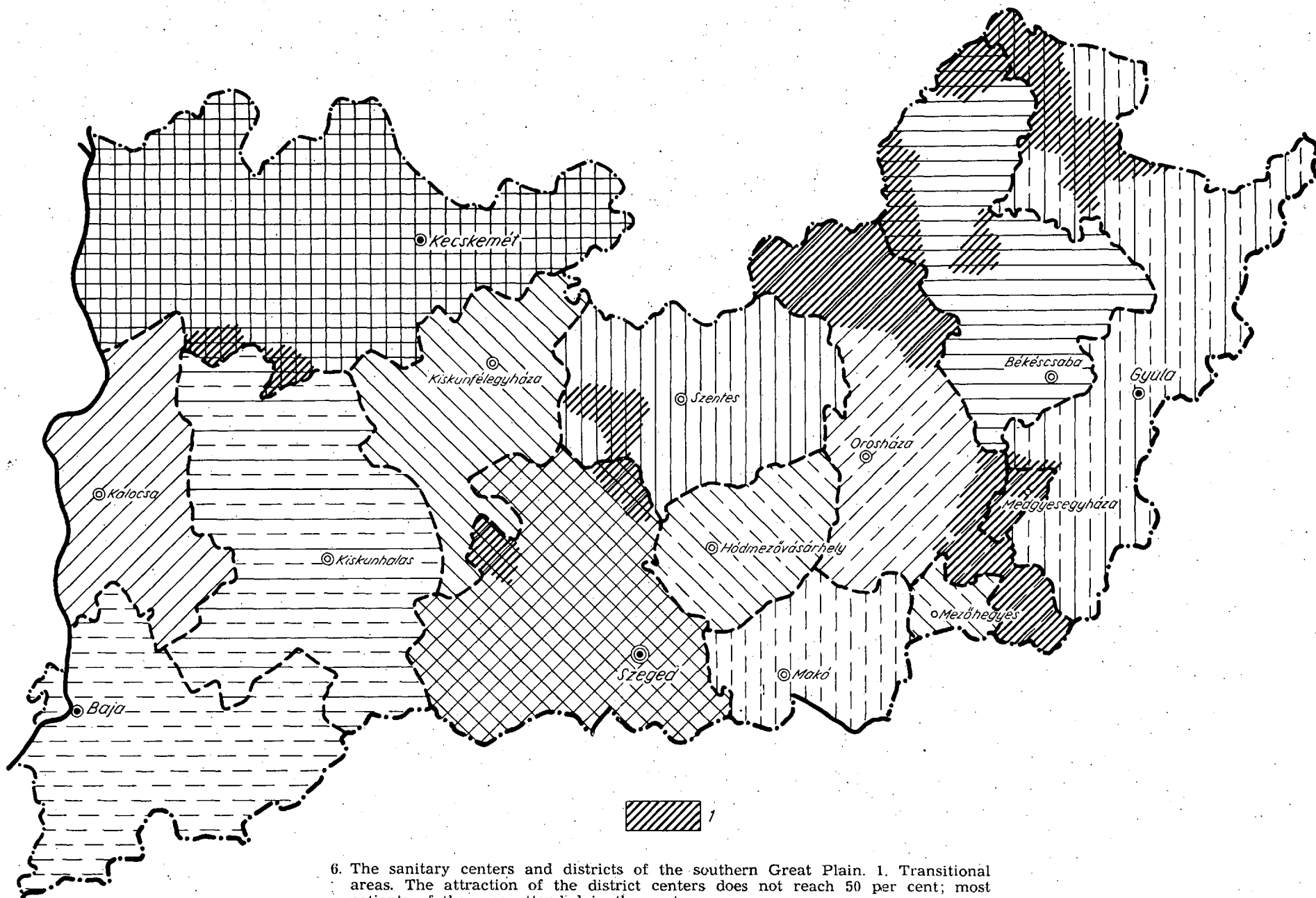
b) The only secondary area but separate public health service district of the southern Great Plain gravitates toward the maternity home of Medgyesegyháza. Its size is, from the point of view of both its surface area and the number of population to be served, rather small in comparison with the districts gravitating toward the other hospitals.

c) Also characteristic are the so-called transitional areas in the districts of Orosháza and Gyula in Békés county. These settlements and districts of so-called middle position have developed as a result of the secondary attraction of Szeghalom and Szarvas.

The public health service districts and district centers are shown in Fig. 6.

The Institutions of Different Levels as Functional Elements of the Settlements

A) One of our aims was to investigate what is the function of the health centers of the southern Great Plain within the framework of the public health service. In addition to this we set ourselves the task to establish the place of the centers in the hierarchy. Classification of the function, the activity on higher and lower levels, is a very complicated



6. The sanitary centers and districts of the southern Great Plain. 1. Transitional areas. The attraction of the district centers does not reach 50 per cent; most patients of the area attended in the centers.

task. We had no opportunity for an analysis based on all the relations, all the determining factors in the light of the data at our disposal; therefore we used the following method to approach the problem:

1. The interrelations between the centers on the basis of the number of patients were put in the fact of the investigation. We took as a base the total number of patients attended at the center, and compared with this the number of patients of the district belonging to the center but attended at other centers. We worked up the data of the three cases of strongest attraction exerted by other districts on the district studied. On the basis of their percentile share they were classed into three categories.

a) The interrelations of the centers and districts can well be seen in Fig. 7. prepared by the above-described method. On the basis of these facts the regional role of Szeged is clear. Szeged is not only the first-rate educational, commercial, economic etc. center of the southern Great Plain, but also its regional public health service center. The sanitary institutions of the town have connections with all the sanitary districts and centers of the southern Great Plain. Among them the sanitary centers of Csongrád county are in the first place, but Baja, Kecskemét, Kiskunhalas and Kiskunfélegyháza are also primarily attracted by Szeged. The sanitary districts of Kalocsa and Békés county are attracted secondarily.

Only its connection with Medgyesegyháza is insignificant as Szeged does not, in this case, figure in the first three places. In accordance with this situation 39 patients from the district of Medgyesegyháza were treated in Szeged in 1968, while conversely there was only one case.

b) It is a little more difficult to distinguish between paracenters and mesocenters even if it is wellknown in practice that Gyula, Kecskemét, and Baja are on the one hand sanitary centers of equal status, on the other hand they have a higher function in this role than other sanitary centers of the southern Great Plain. Kecskemét by its county hospital, Baja on account of its geographical location and Gyula by its legal status and better equipment ensure themselves the role of paracenters and the performance of the functions involved.

The relation and function of Baja and Kecskemét is, in spite of the administrative legal status in favor of Kecskemét, far from uniform. In the matter of education, but also in other functions Baja is a settlement with the role of an antipole to Kecskemét, while in the matter of public health service it has ensured itself equal status.

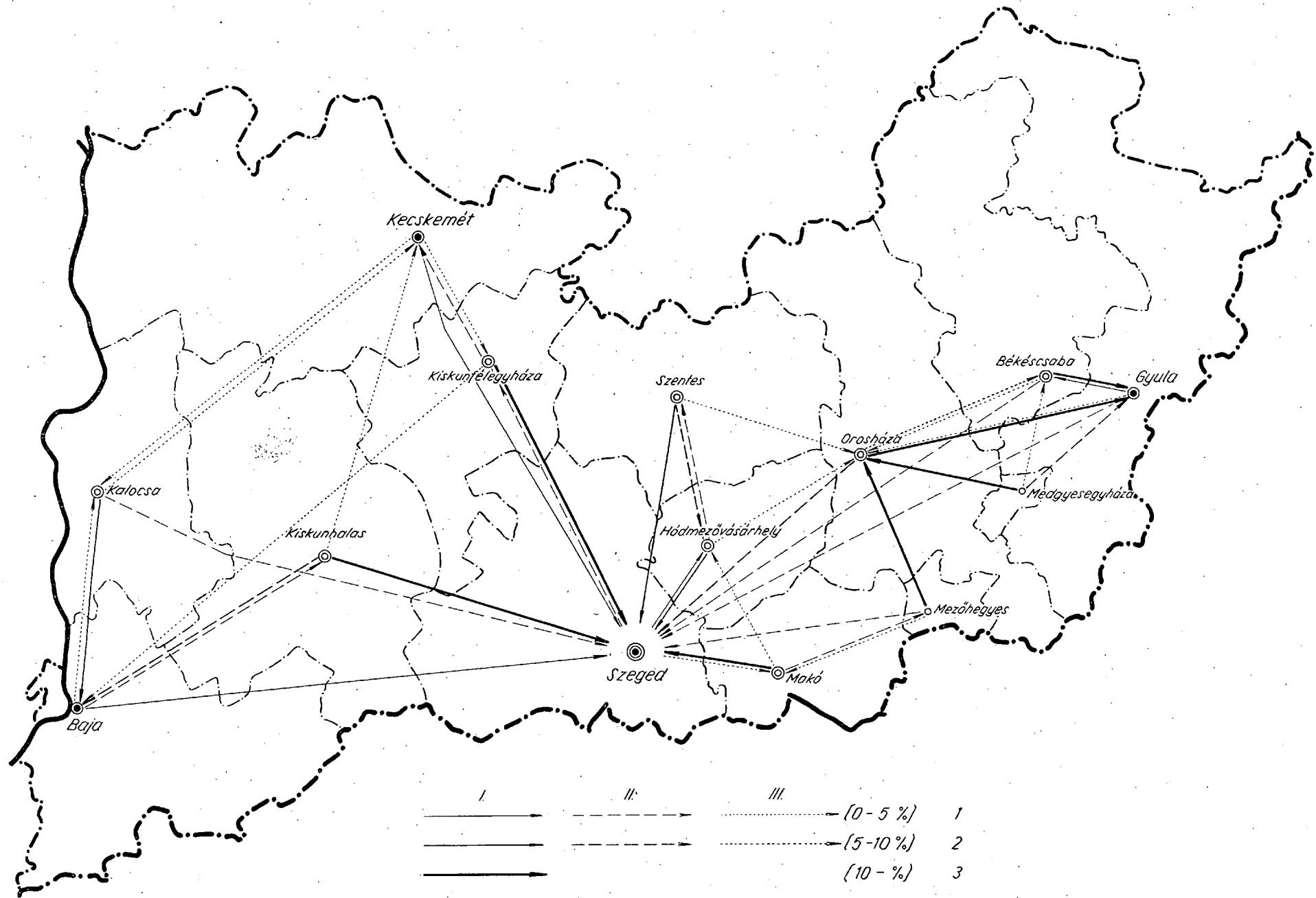
c) Békéscsaba, Orosháza, Szentés, Hódmezővásárhely, Makó, Kiskunfélegyháza, Kiskunhalas, and Kalocsa belong — on account of their connections — to the same category, the group of mesocenters, according to our definition. Szentés with its county hospital cannot fill the role of paracenter in the county on account of the overshadowing effect of Szeged. Békéscsaba in Békés county cannot, in spite of the inverse legal status in respect of administration, take over the sanitary role of Gyula or do the functions and duties involved.

d) Mezőhegyes and Medgyesegyháza represent the so called sanitary sub-centers in the southern Great Plain. On the basis of the connections

TABLE 3.

Comparative Data of the Sanitary Centers of the southern Great Plain

Category	Distribution of Centers in counties				Average population number of one district	Average number of patients attended per one district	Average number of patients attended in the district per 10,000 inhabitants of the district	Average number of local patients attended at the sanitary center per 10,000 inhabitants of the district	Average number of patients from the district per 10,000 district inhabitants	Average percentile proportion of patients attracted from outside the district in the average number of patients	Average percentile proportion of patients attracted from the southern Great Plain in the average	Average percentile proportion of patients attracted from outside the southern Great Plain in the average number of patients
	Bács-Kiskun	Békés	Csongrád	Southern Great Plain total								
Regional center	—	—	1	1	235.568	45.178	1.917	908.1	550	23.9	20.2	3.7
Paracenter	2	1	—	3	150.512	22.301	1.481	486.8	766.6	15.4	11.1	4.3
Mesocenter	3	2	3	8	80.311	11.952	1.488	659.8	633.4	13.1	10.3	2.8
Subcenter	4	4	—	4	10.663	1.939	1.818	554	237.3	72.6	70.1	2.5
Microcenter	6	5	4	14	11.295	760	673	301.3	329.2	—	—	—
Mean total	11	12	7	30	97.670	16.426	1.475	582	503.3	25.0	23.5	2.7



7. The interrelations of the sanitary centers of the southern Great Plain.

1. 0—5%

2. 5—10%

3. 10%

4. Szeged

5. Baja, Gyula, Kecskemét

6. Békéscsaba, Orosháza, Szentes, Hódmezővásárhely, Makó, Kiskunhalas, Kiskunfélegyháza, Kalocsa.

7. Other centers.

and the attraction of patients Szeghalom and Szarvas, which are also in Békés county, fill a similar role.

e) The role of sanitary microcenters is, in the main, filled by the institutions or centers with local duties which attend women in childbirth in areas far away from hospitals.

The maternity homes or microcenters cannot even perform other duties, they are basically ancillary institutions of hospitals.

2. The quantitative data concerning the sanitary relations show, like Fig. 7., the differentiation of the centers according to function rather clearly. (Table 3.)

a) According to these data Szeged is a prominent sanitary center in the southern Great Plain both on the basis of the number of the population to be taken care of in the district, the number of patients attended and the percentile ratio of patients coming from outside the district.

b) Intermediate centers with high functions are the three paracenters of the southern Great Plain: Gyula, Kecskemét, and Baja.

On the basis of the data of Table 3, these centers differ rather sharply from both the regional centers and the mesocenters.

c) According to the evidence of the facts investigated, the eight mesocenters of the southern Great Plain perform sanitary duties on a medium level.

d) The difference between the subcenters and the microcenters is seen mainly in the fact that the microcenters do not have an attraction sphere-forming role. Their attraction does not reach 40 per cent even where the local population is concerned.

Literature

1. Béla, D. 1970: Békéscsaba és Gyula vonzásterületének elhatárolása az egészségügyi és oktatási funkciók alapján. Kézirat. Szeged.
Determination of the Attraction Spheres of Békéscsaba and Gyula on the Basis of Sanitary and Educational Functions. Manuscript. Szeged.
2. Beluszky, P. 1963: Mátészalka vonzásterülete. Földrajzi Értesítő. 12. p. 201—220.
The Attraction Sphere of Mátészalka.
3. Éliás, R. 1954: Szeged vonzásterülete. Földrajzi Értesítő. 3. p. 725—733.
The Attraction Sphere of Szeged.
4. Péntes, I.—Tóth, J. 1970: Szeged egészségügyi vonzáskörzete és igazgatási-szervezési szerepköre. Földrajzi Értesítő. 19. p. 303—314.
The Sanitary Attraction Sphere and the Administrative-organizational Role of Szeged.
5. Péntes, I.—Tóth, J.—Abonyi, Gy. 1969: Der Anziehungskreis von Szeged. Acta Geographica, Supplementband. Die Lage und die ökonomische Entwicklung von Szeged. Szeged, p. 61—123.
6. Bács-Kiskun megye statisztikai évkönyve 1968. Kecskemét, 1969.
Statistical Year-book of Bács-Kiskun county.
7. Békés megye statisztikai évkönyve 1968. Békéscsaba, 1969.
Statistical Year-book of Békés county.
8. Csongrád megye statisztikai évkönyve 1968. Szeged, 1969.
Statistical Year-book of Csongrád county.