

## A Recommendation for Health Facility Areas in the Urban Planning

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### ABSTRACT

Health facilities; is a parameter that should be evaluated on the basis of all reinforcement parameters during planning work in the new residential areas or in the urban areas with the possibility of urban transformation. The importance a country gives to health is directly proportional to the importance it attaches to its people. In this study, data on health facilities, which are one of the main pillars of urban design plans, were collected. It was compared with a regulation in Turkey and discussed the current situation in Istanbul. It has been tried to discuss how much a suitable health facility area should be.

**Keywords:** Urban transformation, health facility, planning.

### INTRODUCTION

Health facilities area; used for as functions: hospitals, health center, maternity ward, dispensary and polyclinic, dental health center, physical therapy and rehabilitation center, integrated health campus functions such as real or legal persons or public facilities are allocated by specifying a private or public facility area in the application development plan.

The health facility area data is in direct relation with the number of population and the coefficients to be determined for these facilities. The higher the population, the health facility will increase and the health facility will tend to increase. The areas allocated to health facilities are one of the important parameters of a country's development level.

In this article; the per capita health facilities in the settlements of the developed countries, which are mostly densely populated by urban population in the world, are discussed. It is tried to put forward a proposal about the place of the health facility areas allocated for places such as family health center, public hospital, and health campuses in development plans and what kind of coefficients should be acted in an optimum planning study.

### INTERNATIONAL VALUES IN HEALTH BUILDINGS

It is not easy to determine which variables are given to zoning a field of health facility

structure by country. According to the planning principles, the coefficient which shows the percentage of one area of health structures varies. The same value may vary in various regions of a country. In this study, it is tried to create a foresight for the standard which should be applied by examining the area covered by the zoning parcels of health facilities in the UK and Germany. The distribution of health facilities in some countries is given in Table 1. According to this table, England has the highest health facility value with 1.71 m<sup>2</sup> / person coefficient. In Germany, this coefficient is 0.82 m<sup>2</sup> / person.

**Table 1.** Distribution of health facilities by countries (Polat, 2017)

Country	m <sup>2</sup> /person
Germany	0,82 <sup>1,2,3</sup>
Britain	1,71 <sup>2</sup>
Iranian	0,4 <sup>4</sup>
Israel	0,55 <sup>5</sup>
Pakistan	0,7 <sup>5</sup>
Portugal	0,1 <sup>6</sup>

According to the Spatial Plans Building Regulation (SPBR), the coefficient of health facility area (Table 2); in settlements with a population of 0-75,000, 1.50 (m<sup>2</sup> / person) and

<sup>1</sup> (Brown, et al., 1969)

<sup>2</sup> (Önen, 1972)

<sup>3</sup> (Altaban and Okyay, 1976)

<sup>4</sup> (Art and Architecture, 1973-1974)

<sup>5</sup> (Çetiner, 1991)

<sup>6</sup> (MDP and ADT, 1985)

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according to paragraph 2 of Article 12 of the Regulation entitled 'walking distance'; "zoning plans, children's playground, playground, outdoor sports hall, family health center,

nursery, kindergarten and primary school about 500 m., secondary schools approximately 1,000 m. in the domain can be planned ", is called (CSB, 2014).

**Table 2.** Health facility area coefficient

POPULATION GROUPS		0- 75.000		75.001- 150.000		150.001- 500.000		501.000 +	
INFRASTRUCTURE AREAS		m <sup>2</sup> /person	Minimum Unit Area (m <sup>2</sup> )	m <sup>2</sup> / person	Minimum Unit Area (m <sup>2</sup> )	m <sup>2</sup> / person	Minimum Unit Area (m <sup>2</sup> )	m <sup>2</sup> / person	Minimum Unit Area (m <sup>2</sup> )
AREA OF HEALTH FACILITIES	Family Health Center	1,50	750-2.000	1,50	750-2.000	1,50	750-2.000	1,60	750-2.000
	Step Health Facilities		3.000		3.000		3.000		
	Oral and Dental Health Center		Per unit (110) m <sup>2</sup>		Per unit (110) m <sup>2</sup>		Per unit (110) m <sup>2</sup>		
	Birth and Child Care Homes		Per bed (130) m <sup>2</sup>		Per bed (130) m <sup>2</sup>		Per bed (130) m <sup>2</sup>		
	Public Hospitals								
	Specialized / Education and Research Hospitals								
	Physical Therapy and Rehabilitation Hospitals								
Health Campuses	Per bed (220) m <sup>2</sup>	Per bed (220) m <sup>2</sup>	Per bed (220) m <sup>2</sup>	Per bed (220) m <sup>2</sup>					

According to the districts of Istanbul Metropolitan Municipality (2003) in the metropolitan area of Istanbul, in the context of health facility data, Table 3 shows the per capita health facility area per capita in Istanbul districts. The data in Table 3 were compiled by Istanbul Metropolitan Municipality (2003) in the context of health facility data according to

districts in the metropolitan area of Istanbul. The health facility per capita in Istanbul districts is currently specified. This value is 7.43 m<sup>2</sup> / person with the highest number of Maltepe; 0.01 m<sup>2</sup> / person belong to the district of Esenler. On the basis of all the districts of Istanbul, the average value was 0.66 m<sup>2</sup> / person (IBB, 2003).

**Table 3.** Distribution of health facility areas (per capita) in Istanbul districts (Polat, 2017)

Districts	All health facilities (m <sup>2</sup> / person)
Avcılar	0,08
Bağcılar	0,03
Bahçelievler	0,24
Bakırköy	0,62
Bayrampaşa	0,11
Beşiktaş	0,14
Beykoz	0,49
Beyoğlu	0,21
Esenler	0,01
Eyüp	0,13
Fatih	0,91
Gaziosmanpaşa	0,13
Güngören	0,24
Kadıköy	0,96
Kâğıthane	0,09
Kartal	0,98
Küçükçekmeçe	0,07
Maltepe	7,43
Pendik	0,11
Sarıyer	0,11
Sultanbeyli	0,07
Şişli	1,25

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Tuzla	0,04
Ümraniye	0,29
Üsküdar	1,49
Zeytinburnu	0,93
Average	0,66

In the context of world standards; England and Germany, higher than in Turkey, Iran, Israel and Portugal, said to be low. In some districts of Istanbul (Fatih, Kartal, Maltepe, Şişli, etc.) health facilities are dense, due to past planning practices.

### A DESIGN PROPOSAL FOR HEALTH FACILITY AREAS

The above-mentioned data, standards and

**Table 4.** Relationship between the legend-boundary value coefficients in health facility areas

Legend	Boundary Value	Situation
0	0,00	Existing health facility area adequate (no need)
1	1,00	Existing health facility area is inadequate (needed)

In this case the draft health facility area coefficient ( $m^2 / person$ );

- Legend 0: There is no need for a health facility within the project area or within walking distance (500 m.) And the limit value coefficient should be  $0.00 m^2 / person$ .
- Legend 1: A health facility is required within

current situation are tried to be developed. This recommendation is a mathematical model base that is defined by the coefficients of legend and boundary values. In determining the coefficient of a health facility area (per capita), two different situations are considered according to the conditions. The model calculated according to the status of need / no need. The legend of these cases is shown in Table 4 as 0 (no need) and 1 (need) (Polat, 2017).

- the project area or within the walking distance (500 m.) And the limit value coefficient must be  $1.00 m^2 / person$ .

For example; what is the area of the health facility that is needed in a residential area with a population of 8,000 and no health facilities within walking distance.

Select Legend 1 according to Table 4. In this case, the limit value coefficient will be  $1.00 m^2 / person$ .

Population (person)	x	Draft Health Facility Area Coefficient ( $m^2 / person$ )	=	Draft Health Facility Area ( $m^2$ )
8.000		1,00		8.000

According to this analysis, 8.000  $m^2$  health facility areas are needed.

### CONCLUSION AND EVALUATION

It can be said that health facility areas are an important criterion for measuring the value of a country. In this context, some coefficients are determined about what should be the health facility area in a settlement. In this article, the areas that need to be allocated to health facilities were studied in new settlements or in places where urban transformation opportunities were gained.

The data in Istanbul and some countries around the world gathered together to find an answer to question of what is the amount of land that health facilities need per capita and a number of coefficients are determined.

These coefficients determined the proposal health facility area as a proposal and tried to

focus on the most optimal option and to show the results of a sample and application.

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