

HEALTHCARE DISTRICTS: THE CONNECTION BETWEEN HEALTH INSTITUTIONS AND THEIR NEIGHBOURHOODS

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Abstract

Increasing urbanization and health

According to the figures from the United Nations (UN), more than 50% of the world's population currently lives in urban centers and the expectation is that by 2050 the urban population will virtually double, making urbanization one of the 21st century's the most transformative trends. Populations, economic activities, social and cultural interactions, environmental and humanitarian impacts, are increasingly concentrated in cities. This picture presents huge challenges for sustainability in terms of housing, infrastructure, basic services, food, education, jobs, safety, natural resources and health. The United Nations Human Settlements Program, UN Habitat, is responsible for SDG 11 out of the 17 Sustainable Development Goals (SDGs) established under the "2030 Agenda", known as "Urban SDG", which is designed to make cities more inclusive, safer, more resilient and sustainable. In this age of increasing urbanization, in the context of the 2030 Agenda for Sustainable Development, the Paris Agreement and other global development agreements essentially work under the assumption that cities may be the source of solutions to the challenges faced by the world rather than their cause, and therefore have the potential to become powerful tools for sustainable development, both in developed countries as well as in developing ones. The New Urban Agenda adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III), which was held in Quito in 2016 (A/RES/71/256), incorporated an important recognition of the correlation between good

urbanization and human, environmental, social and economic development.

Brazilian Context

Brazil covers an area of 8.5 million km² and more than 210 million inhabitants. About 86% of its population is concentrated in urban centers () and competes for job opportunities, housing and good living conditions in a country where public services and public management fall short due to a lack of financial, human and political resources. In this context, it is worth stressing the importance of the role played by the private sector in supporting, complementing and qualifying the social demands not met by the Government, whether in the health area or in the various essential services of public interest. The phenomenon of population migration to urban centers is due to numerous socio-economic, cultural and political factors. The result is a multitude of problems caused by the excessive growth of metropolitan areas, including social disparity, inefficiency of urban infrastructures and increasing levels of informal housing. The problems that large cities have to deal with nowadays include poor mobility caused by the model of occupation and expansion of the cities as well as due to the lack of adequate public transportation and the limited supply of jobs and income. In light of this problem in the urban environment, which is not exclusive to Brazilian cities and can easily be found in a number of contemporary global metropolises, there is a need to mull over the conditions of the population's social, environmental, economic, mental and physical health. It is also necessary to reflect on opportunities related to the performance of health

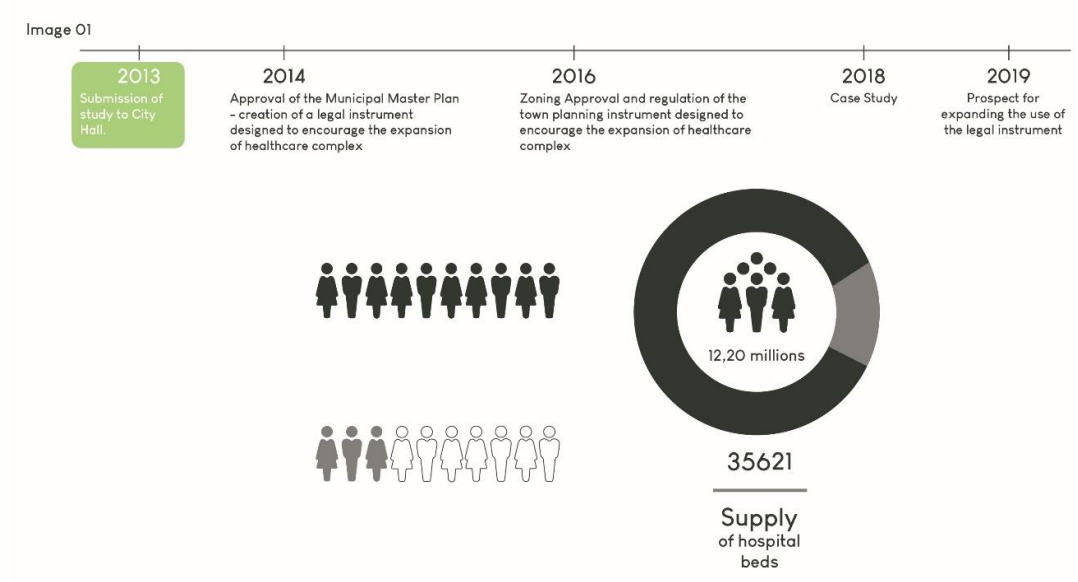


Figure 1. Timeline – São Paulo context.

institutions, particularly private ones, in the face of this reality. Assuming that the hospital units operate in well-established urban centers, and to a large extent consist of a number of buildings spread over several nearby blocks, which are often connected by tunnels or walkways, but otherwise have no direct relation with the public area. Assuming that the urban spaces act as the links between private plots of land, and that these spaces can provide coexistence, education and best daily practices. Also assuming that it is appropriate to integrate the health system with the elective services, as well as healthcare services with emergency or chronic patients, and also with preventive and educational services, which perform a fundamental role in reducing the costs that have been allocated in the health sector in the world. It is worth reflecting on the opportunities that healthcare institution shave, particularly private ones, in developing countries, to address new scales of operation, by means of the creation of new health services and products, especially those with a focus on prevention, best practices and good urban life conditions. Encouraging the population to practice sport and to eat healthily, by means of educational campaigns, the sale of products and specialized services aimed at physical, spiritual and mental health.

And in this way boosting the economy and the health market, at the same time as it opens up opportunities for qualifying the population's lifestyle and health in urban spaces. In this context, new models of partnership between the public and private sectors, new legal tools in terms of urban and fiscal incentives should occupy the spaces available in the economy, expanding and qualifying the market in the healthcare sector. This is a new approach that will enable the development and creation of new products aimed at the prevention and well-being segments, which are capable over the medium and long term of contributing in a more efficient way, from the financial point of view, to the health indices and quality of life of the world's population.

Case Study, Sao Paulo - Brazil

We carried out a case study in Sao Paulo, a Brazilian city that accounts for the country's largest GDP (gross domestic product) and houses the largest population of around 12.2million inhabitants. (Figure 1)

Supply of Hospital beds in the city

The city of Sao Paulo's general and specialized hospitals offer accredited and non-accredited hospital beds to the public

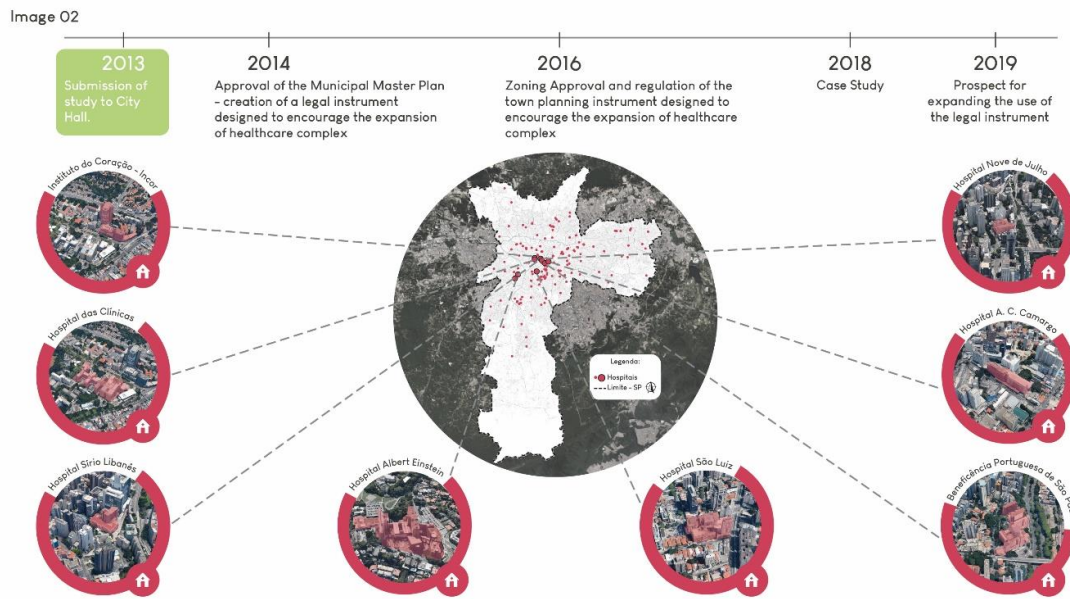


Figure 2. Timeline – some Healthcare Complex in the city

healthcare system. There are 17.785 (public health system) beds and 17.836 (private health system) beds (). (figure 2)

Pattern of Expansion of Healthcare Complexes

Based on the extreme density and the very limited supply of empty plots of land in the city, the pattern of occupation of these hospital structures is repeated: an area is effectively occupied and consolidated, there is only a limited supply of vacant land in the surrounding areas, and there is a need for expansion. In addition to this scenario, it is necessary to confront the factual situation of occupation of the territory by the hospitals in the city of Sao Paulo, as well as the restrictions imposed over the course of time by the municipal urbanization legislation (zoning) that governs the town planning parameters and the installation condition sofa number of activities in the urban territory. The case study, which is the subject of this paper, provides a dedicated research regarding the purpose of the health facilities

creation of new municipal public policies in the healthcare sector. Accordingly, it presents possible solutions stemming from the creation of specific laws aimed at encouraging the construction and expansion of healthcare institutions in the city of Sao Paulo. Based on the survey of the most significant healthcare facilities in the city, it was possible to detect common characteristics in the implementation of these healthcare institutions in the territory, including: strategic location, ease of access, well-established neighborhood, available urban infrastructure, and a standard pattern in terms of expansion of the existing structures. Due to the location of the health complexes in well established neighborhoods, the need for expansion faces physical barriers as a result of the limited supply of plots of land or vacant properties available. (figure 2)

The expansion of Healthcare complexes versus zoning restrictions

In addition to the barriers to the needed expansion, in many cases restrictions imposed by urban legislation (zoning) end up placing restrictions on use and occupation, which prevent or hinder the necessary expansion of

Image 03

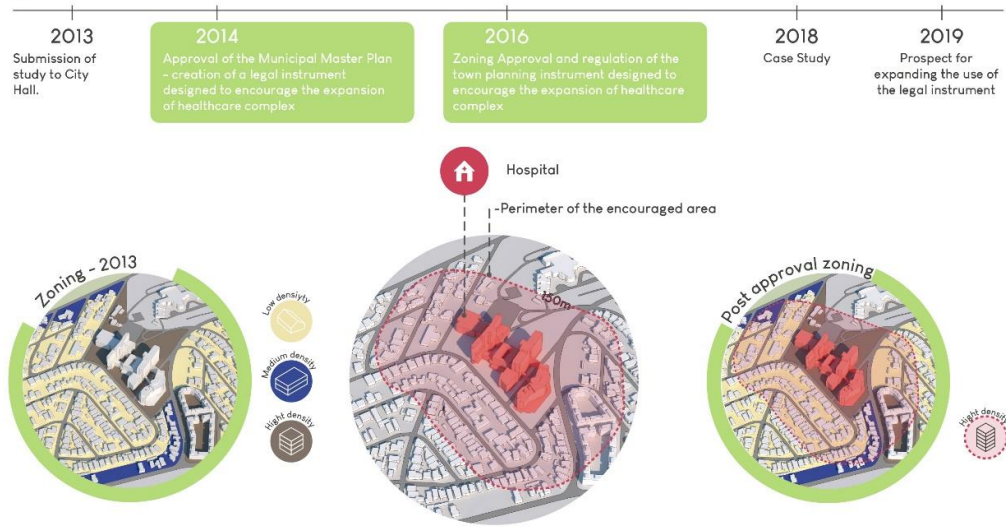


Figure 3. Timeline – Step by Step of our case study

Image 04

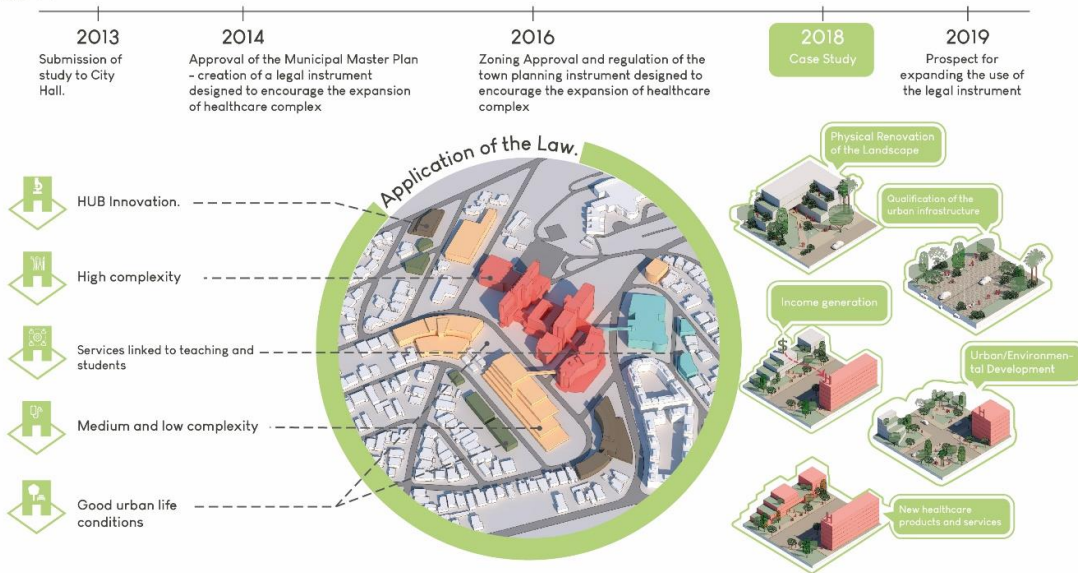


Figure 4. Timeline – Case Study and application of the Law.

these healthcare institutional buildings. (Figure 3)

The step by step of our case study

Initially, based on the survey of the most significant healthcare complexes and their implementation characteristics, the next step was to superimpose the implementation map of these facilities on the municipal zoning. (IMAGE 3) It was then possible to detect the various restrictions found in the legislation regarding the use and occupation of land which, in addition to the territorial conditions, imposed many other difficulties on the expansion of this important activity in the city. Next, the modus operandi, or behavioral model of growth of hospitals, was detected based on the implantation of the central cell of the healthcare facilities: saturation of growth within the urban limits - constructive potential and installation conditions present in the zoning - of the plot of land itself. It was noted that once the maximum occupancy in the plot of land was reached, the expansions began to occur in other plots of land and other blocks, often not adjoining the hospital itself. In general, autonomous or less complex activities ended up being installed in these blocks in a random and disorderly way. By means of this diagnosis, coupled with the compilation of reference data, a growth pattern was detected, as well as a defect that can be found in the urban legislation common to all health facilities. In this way, the case study moved forward to its final stage: the structuring of consistent technical justifications capable of supporting the proposition of a new draft urban planning bill, the main purpose of which is to create incentives for the installation of activities that complement the existing healthcare institutional buildings in their surrounding areas. This step was carried out and the proposal was presented to the City Hall. (Figure 03)

The healthcare complex and their surrounding areas

Both the Executive Branch and the Legislative Branch welcomed the study that was presented, complying with the legal incentive. In 2014, the City of Sao Paulo's Master Urban Plan was approved and article 371 of this law established the public

incentive policy for the installation of activities that complement the healthcare complexes, taking into account an envelope range of 150 meters. Law 16.050/2014, Article 371. The revision of the LPUOS, or specific law, should define special conditions of land use and occupation that allow the existing health, education and health research complexes to occupy areas or blocks in the immediate vicinity with the objective of regularizing, renovating or constructing new units or complementary units in these areas. Sole paragraph. For the application of the provisions of the "caput", the immediate vicinity should be defined having as a limit an envelope range of 150 meters from the boundaries of the plot of land on which the existing healthcare, education and research units are located. In 2016, approval was given for the city's zoning, which, as determined by the main legislation, was created for the purpose of regulating the aforesaid legal-town planning instrument: Law 16.402/2016, Article 115. In the case of new buildings, regularizations or renovations with an increase in the constructed area, all uses related to healthcare and health education services, as well as the incentives provided for in article 114 of this law, in properties that lie within 150 meters of the boundary of the plot of land in which the existing healthcare, health education and healthcare research complexes are located are permitted, regardless of the usage zone in which they are located, except for properties located in those areas which are included in SAPAVEL (the System of Protected Areas, Green Areas and Open Spaces). Paragraph 1. In the cases provided for in the "caput", the maximum occupancy rate may be increased by 50% (fifty percent) in relation to that defined in Table 3 of this law. Paragraph 2. For the purposes of the provisions of the "caput", health complexes are deemed to be those plots of land inserted within an area of at least 20,000m² with uses predominantly related to healthcare, health education and health research in at least 60% of the constructed area in the aforementioned space, recognized by the municipal body responsible for urban planning.

Since this public policy was approved, we have assisted a number of healthcare institutional groups using this instrument to

Image 05

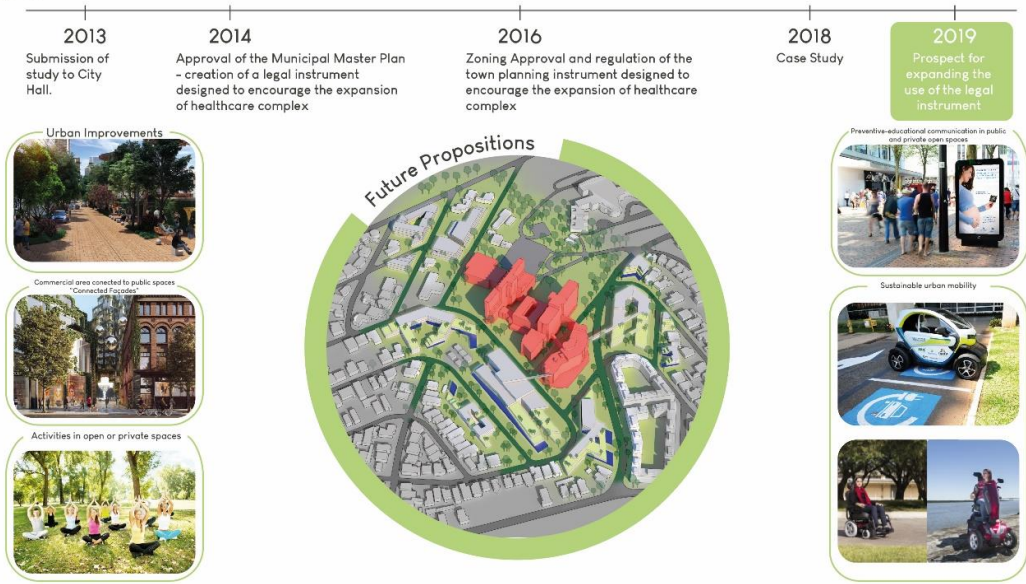


Figure 5. Future propositions – urban references.

plan their expansion. However, in addition to the expansion benefited by the zoning for the construction of new buildings in the area surrounding existing healthcare institutional buildings, which was presented to the municipal administration at the time and that this law represented a major opportunity, despite the fact that not much use has yet been made of it, and it should be added, which is still not well understood by the healthcare institutions, features the requirement that these healthcare complexes “extend beyond the walls of their buildings”. Therefore, these complexes could start to create and offer new healthcare services and products in the city's, the district's and the neighborhood's spaces. We refer to products primarily in the area of prevention and well-being, significantly expanding not just the classification of the services, but also the target audience potentially served by the hospital structures. In this way, not only will the population be widely benefited, but also the health market, which, in turn, will attend a new scope and scale of operation. (Figure 04)

Results achieved

Our Case Study is the result of the drafting and continuous reformulation of the Master Plan of a major health institution, based in Sao Paulo, with a view to opportunities for the expansion and qualification of its infrastructure and services. It was acknowledged that the central cell, where the hospital originated exhibited a prevalence of high complexity. To this end, a series of relocations of medium and low complexity support areas were proposed. With a great many interventions, particularly in terms of technology and civil construction projects, the effective expansion of the high complexity unit was essentially achieved by means of the enlargement of the operating room and of the intensive care unit and the increase in the number of hospital beds.

At the same time, outside the main site, but within the 150 meters envelope range, new areas were prospected. The objective was to install new medium and low complexity buildings, as well as connect them to the existing complex by means of the adoption of tunnels and walkways. The urban atmosphere that has been promoted, from this point onwards, corresponds to the

creation of an effective health district, in which not only the vast majority of buildings in the hospital complex's surrounding area are dedicated to health services. The streets and public walkways, along with the open spaces between buildings, areas of public use for interaction, entertainment, physical and educational activities also tend to assume activities related to health services.

(Figure 5)

Accepting that the driving factor behind the urban transformation of a neighborhood into a health district -where a range of educational campaigns, prevention services, commercial areas at the ground floor level of the buildings connected to the public spaces (“Connected Facades”), socialization of the neighborhood and services aimed at well-being -is potentially planned and implemented by the healthcare complexes, renews and innovates the role of these institutions in the qualification of the health of the population, of the sectoral market in the healthcare area, and of the urban space as a whole. The growing concern regarding the qualification of cities around the world should be highlighted, particularly in the search for more efficient solutions for managing their infrastructure and services, as well as for improving the quality of life in their ecosystems. The logic of the implementation of environments of well-being in smart-cities -with a careful approach to the occupation models capable of reconciling technical, technological, legal, cultural, socio-community and urban issues -associated with the qualified operation of healthcare institutional buildings, is precisely where the conclusion of this Case Study is focused on. It is a paper that demonstrates the real opportunity for increasing and qualifying services in the healthcare sector in an urban environment. Above all, having the health institutional buildings as protagonists gives a boost to the sectoral economy in the healthcare area, based on the collaboration of the strategic view of the specialized architect urban planner, who works on the drafting of the master plans and architectural projects associated with urban projects that are focused on healthcare.

Endnotes

1. (1) Social indicators -Indicators on human settlements -United Nations Statistics Division, 2011.
2. (2) Ministry of Health | CNES, 2017 -consulted on 08.29.2019 on the website of the Sao Paulo City Hall. <https://www.prefeitura.sp.gov.br/cidade/secretarias/upload/saude/arquivos/infassistenciais/Leitos.pdf>