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## Public health as an alternative perspective on decoding urban planning

**Abstract:** Over the past two decades, studies of the impact of urban planning on public health have greatly increased, and many have been translated into policy evaluation and urban design practice. In contrast, research on how urban planning is shaped by public health remains underrepresented. In this

regard, examining urban planning history in terms of public health is valuable for unfolding the layers of urban transformation and interpreting the intrinsic nature of cities as human habitats. Through this lens, planning history can provide insight into the longitudinal dimension of public health and a more nuanced

view of its physical context, which is critical for translating insights into future urban planning and design.

**Keywords:** public health, planning history, urban transformation, interpretation

Population health and urbanization have been inseparable twins since the dawn of humankind (Hutchison, 2010: 876–879). Considerations of health were integral to the earliest human settlements, as articulated in Hippocrates's treatise *On Airs, Waters, Places* (400 BC; Schneider & Lilienfeld, 2008: 5–24). Like wars, natural disasters, socioeconomic fluctuations, and technical innovations, public health issues have shaped and reshaped cities' transformations more intrinsically since the nineteenth century.

During the cholera outbreak in London in the 1850s, the work of early urban health reformers helped institutionalize land use zoning, housing codes, drinking water, and the sewer system (Hutchison, 2010: 876–898; Porter, 1999: 403–415). Such efforts spurred the parallel germination of modern public health, urban planning, and sanitary engineering. Since then, pursuing a healthy city has been an antidote, vision, or even pretext of urbanization (Castex

& Samuels, 2004; Carr, 2014: 1–8), with the shape of twenty-first-century cities being dictated by health considerations (Hall, 2001; Porter, 1999: 662–667, 710–718).

In the past two decades, studies of the impact of urban planning on public health have greatly increased, and many have been translated into policy evaluation and urban design practice (Hutchison, 2010: 859–862, 876–898; Giles-Corti et al., 2016; Davis, 2022). In contrast, research on how urban planning is shaped by public health remains underrepresented. Compared to the etiological induction of public health outcomes due to urban planning and construction, the counter-inquiry involves sociocultural interpretation and inference (Jackson et al., 2013; Scheer, 2016; Davis, 2022; Hensley et al., 2020) with more complexity and ambiguity. Therefore, uncertain deduction and reconstruction may be the main barrier causing such research lacunae.

A brief review of air-borne epidemics may divulge the complex and layered interconnections between public health and the built environment, which pose a challenge to interdisciplinary inquiries. During the cholera epidemic in London in the 1830s, the prevailing medical knowledge, a legacy of Hippocrates's beliefs about air, attributed the disease to a miasma caused by dampness, darkness, and still air (Porter, 1999: 662–667; Schneider & Lilienfeld, 2008: 403–415). Opening up the urban fabric to let in light and air became one of the recommended cures, along with separation reinforced through community management. The emerging residential square provided a model valued by developers, social reformers, and epidemiologists, and it influenced the development of the large city park and the house-and-garden of suburbia (Lawrence, 1993). In 1854, John Snow, the father of modern epidemiology, established that it was germs rather than miasmas that killed thousands of people by analysing epidemic distribution, wells,

and related street-based human activities. The germ theory of disease has promoted the gradual growing apart of public health and urban planning since then (Hutchison, 2010: 876–879). However, polluted air did kill people in London in the 1870s (Schneider & Lilienfeld, 2008: 282–285), with air pollution still causing deaths in many cities today. Complicatedly, the separation and de-concentration (including suburbanization) measures that were taken a hundred years ago to improve public health are contributing not only to air pollution but also to chronic health problems today. Public health has rejoined urban studies to address social determinants of health, and it has collaborated with urban planning to introduce suitable interventions (Perdue, 2003; Hutchison, 2010: 876–879; Giles-Corti et al., 2016).

Even urban transformation responding directly to public health issues is multifaceted, as exemplified in urban design codes and implementations. The fluctuating legacies of public health are complicated, involving national and local cultures. Therefore, deciphering urban transformation and planning perspectives through the lens of pursuing public health is difficult and time consuming, but it nonetheless provides insights into how cities are built and why, as well as into past design theories on city construction (Moudon, 1997; Davis, 2022).

To understand how urban planning has changed in terms of public health, the 3-i (ideas, interests, and institutions) framework is relevant, in which the forms and dynamism from urban morphology reveal the elements and processes in the built environment (Conzen, 2018; Larkham, 2022; Hensley et al., 2020).

From Antiquity to the Middle Ages, defence was a dominating function of many cities, which prioritized fortifica-

tion in urban planning. Although the Cloaca Maxima (the great sewer) and relevant sanitary facilities were built in Rome in 500 BC, the modern sewer system in western cities was reborn only after the public health crisis in the mid-nineteenth century (Schneider & Lilienfeld, 2008: 5–24). After that, the sanitary and hygiene system became increasingly important during industrialization, whereas fortification waned. The fixation line effect related to the city wall was superimposed by modern infrastructures, including sanitary and hygiene systems, which underpin the repletion and expansion of cities (De Feo et al., 2014; Rehman, 2022). The formation of fringe belts in the early twentieth century can mainly be attributed to economic and building cycles. The Edwardian fringe belts are characterized by openness, accommodating large land uses, including those related to public health. With their merits as ecological, cultural, and consequently salutary corridors being acknowledged, the openness in the fringe belts will be maintained or reinforced (Whitehand, 1994; Larkham, 2022). At the community and plot scales, pursuing a healthy place and life, mainly related to fresh air, light, and opportunities for physical activity, has been embodied in building and landscape prototypes since the industrial era (Carr, 2014: 1–8).

Public health issues and especially crises are dynamic factors impacting the built environment and planning policy. For example, the damp air and organic waste associated with and even required by industry made Nantes an unsanitary city in the seventeenth century. From the eighteenth century onward, positive measures, such as aligning and widening streets, creating underground sewers, and filling rivers, permanently transformed the fabric and structure of the city (Benzerzour et al., 2011). Cholera, although lately attributed to germ-polluted water rather than air (Porter, 1999: 402–415), substantially

resulted in opening up the urban fabric in London, Paris, and other European cities from the nineteenth century onward (Lawrence, 1993). The last decade has witnessed a series of practices and policies, such as the Healthy City initiative pursued by the UN's SDGs, the *Healthy Nation Strategy and the Healthy City Policy of China* (2017), the *Plan for a Healthy Los Angeles*, and *Plan Melbourne* (2017–2050), which may influence the urban form in the near future.

Therefore, public health offers a complementary interpretation of how cities are shaped, although its linkages to urban policy and planning phases may be not as consistent and ubiquitous as economic cycles. Construction and demolition, facilities and infrastructure, legislation, and institutional code provide a descriptive and explanatory perspective on how urban planning was shaped in terms of public health issues, which may be enriched with the perspectives of agents, institutions, and processes, and a relevant comparative examination.

Exploring how urban planning is changing in terms of public health is valuable for unfolding the layers of urban transformation and interpreting the intrinsic nature of cities as human habitats (Moudon, 1997). Such inquiry is also pertinent for teaching urban planning because public health issues have become critical globally and locally. Universities offer joint degree programmes, and courses on health and the built environment have increased dramatically. Simultaneously, increasingly more urban studies programmes emphasize urban morphology, planning history, and city heritage (Moudon, 2015; Gu, 2018; Oliveira, 2018; Hein & van Dooren, 2020). Planning history can provide insight into the longitudinal dimension of public health and a more nuanced view of its physical context, which is critical for translating insights into future urban planning and design. In addition, the public health

perspective may enrich understanding of the sociopolitical visions of cities as witnessed during the Covid-19 pandemic and thus contribute to understanding future urban transformation in a wider sense.

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## Biography

Zhen Xu, a Chinese state-certified urban planner, is a professor at the College of Landscape Architecture of the Nanjing Forestry University in China. His field of interests include landscape analytics, urban design, open space, healthy places, urban morphology, landscape history, and historical GIS. This study is based on the findings obtained in two NSFC projects: "Research on the open space morphology of Nanjing using a historical-GIS approach" (no. 52078254) and "Research on physical activity in urban open spaces using an HIA approach" (no. 51208264), for both of which he was the principal investigator.

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