Urban Planning and Public Health

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Introduction

The health-focused root of modern town planning could be traced back to the ideas and vision of planning pioneers such as Ebenezer Howard and Patrick Geddes in Britain, Lewis Mumford in the United States, and Gräfin Dohna and James Hobrecht in Germany (Baumgart, 2017; Duhl and Sanchez, 1999). Planning is about the management of housing, infrastructure, and the environment, the very same determinants of health, through strategies, regulations and standards. Since the introduction of 1848 Public Health Act to combat infectious disease in the crowded cities of the British Industrial Revolution, awareness of the interrelations between and cumulative impact of different health determinants of the complex human-environment system, has grown. The prevalence of chronic illness such as obesity, diabetes, depression, and high blood pressure, which often result in lower life expectancy, manifest into variegated spatial landscapes of health inequalities. Despite the close tie between public health and planning, the two professional disciplines have had a roller coaster relationship even after 1900 when medical practice turned its attention from the environment and sanitarism to the science of bacteriology (Hebbert, 1999).

The Covid-19 pandemic has underscored the associations between population health and the form and pattern of urban development and the urgent need for improved integration between public health and planning, a call to arms echoed by global organisations such as UN-Habitat and the World Health Organisation (UN-Habitat, 2021; WHO and UN-Habitat, 2020). This heightened interest in urban planning as a significant facilitator of public health is not new but rather a resurgence following decades of advocacy from international urban health initiatives, the Healthy Cities movement being a prominent example. They have argued for urban planning's potential to both promote health and alleviate health inequalities by actively influencing spatial urban functions and forms (Corburn, 2009; WHO, 2007).

The relationship between health and the environment has been widely influenced by Dahlgren-Whitehead's (1991) 'rainbow' model of the determinants of health. Despite the consensus on the necessity and expected benefits of integration, bridging the gap between public health and planning presents a daunting challenge for policymakers and practitioners. The desire to integrate key policy areas - like sustained economic growth, environmental resilience, and inclusive social development - has long been a goal of planners (Friedmann, 2004, p. 52), even referred to as the "philosopher's stone" of modern government (Peters, 2015, p. 12). The argument for state urban environment interventions to improve public health put forward by Edwin Chadwick in his 1842 treatise, 'The Sanitary Condition of the Labouring Population of Great Britain', focused on the economic aspect. Even in recent years, despite growing agreement that the economic, environmental and societal health dimensions of sustainable development are equal priorities, obstacles such as the specialisation and differentiation of policy domains, risks, partisan politics, accountability issues, privacy concerns, cost considerations, and professional silos have hindered effective integration (Peters, 2015). Furthermore, vertically, horizontally and sectorally fractured decision-making has allowed health inequalities to continue. Blackshaw (2012) thus questioned why there is still limited understanding of ways to tackle the so-called 'lifestyle disease'; and that concerted effort is needed to tackle health inequalities associated with the environment (Marmot, 2010).

This special issue aims to contribute to this endeavour by bringing together a set of papers that apply a critical theoretical lens and innovative methodological strategies to understand the relationship between urban planning and public health, thereby broadening our comprehension of the dynamic interplay between diverse actor groups and policy sectors shaping our built and natural environment. This complex interaction forms the crux of the decision-making process that directs urban planning

and, as a consequence, public health outcomes. Drawing on case studies in England, China and New Zealand, this special issue offers an analysis and nuanced understanding of how different socio-political and institutional environments influence the integration of public health concerns into urban planning. Our objective was to transcend the traditional dichotomies, offering instead a collection of fresh perspectives that challenge and reshape existing conceptions and provide valuable insights into the multifaceted, fluid dynamics of decision-making processes that are at the heart of urban planning and public health outcomes.

The challenge of integrating planning with public health

Town (or land use) planning has matured to become consolidated in state functions in many countries since the birth of the discipline in the early twentieth century. Despite the institutionalisation of planning activity, the planning profession has maintained its visionary focus on the coherent and coordinated long-term spatial logic of regulating the use of land for sustainable development to strike the balance between economic growth, social development and environmental protection. Specifically, it focuses on the strategy, design, and regulation of the uses of space that involves the physical form, economic functions and social impacts of the environment (Fainstein, 2022). Planning can be applied at a variety of spatial scales, ranging from strategy development at the regional and sub-regional or city-region scale to master planning of local neighbourhoods, as well as addressing cross boundary issues. This special issue focuses on 'urban' planning by emphasising the coverage of different planning activities and objectives in an urban setting. It is important to note that the perspective and definition of planning vary widely in different spatial and national contexts.

The goals of urban planning are, by their broad nature, varied and complex and their delivery is reliant upon the action of a plurality of actors and agencies across operationally independent policy sectors (Albrechts, 2004). The term 'spatial' planning which was widely adopted in Europe, including in the UK, is seen as a strategy primarily focused on addressing the issue of aligning the spatial aspects of various sector policies through a territory-centric approach (Cullingworth et al., 2014). The emphasis on policy coordination is not only vertical across different levels of government and horizontal over different policy sectors, but also diagonal across the demands of public and private institutions to achieve policy goals (Priemus, 1999). These coordination efforts can help to remove obstacles to plan implementation (Peters, 1998) by avoiding redundant efforts and waste of resources by multiple actors; preventing lacunae and policy gaps due to lack of awareness or motivation; and reducing incoherence from different policy and spatial spheres with conflicting goals and policies.

The integration of planning and public health has been substantiated by a wealth of research which illustrates how ineffective planning can exacerbate health problems. It can give rise to numerous unintentional problems, such as air pollution, traffic congestion, car dependency, urban heat islands, substandard housing, poor access to healthy foods, unsafe drinking water, inadequate sanitation and waste management, absence of safe spaces for physical activity and active travel, and lack of access to green spaces. All these factors cumulatively contribute to an increase in mortality rates from both communicable and non-communicable diseases, including diabetes, cancer, cardiovascular and respiratory diseases, and injuries (Barton and Grant, 2006; Ige-Elegbede et al., 2020; PHE, 2017; Rao et al., 2007; Rydin et al., 2012). Nonetheless, Blackshaw (2012) offered his indictment that the challenge is about "designing spatial policies that will deliver a social justice and tackle health inequities head on ... get the right services in the right place at the right time, something that currently is simply not happening".

Today's urban landscapes present even more formidable challenges to the integration of planning and public health (Trein et al., 2021). These include the rise of private and third sector governance, the rapid expansion and utilisation of data regarding human and non-human activities, and a growing awareness of so-called 'super wicked problems' (Levin et al., 2012) and 'deep uncertainties' (Walker et

al., 2013). These modern obstacles are particularly challenging for urban planners, who are tasked with addressing complex policy issues such as the climate crisis, income inequality, productivity, homelessness, and, of course, public health without proper resources (RTPI, 2020a).

Creating the suitable environmental conditions conducive to good health requires more than just an increase in a level of integration, however. It demands a cultural and behavioural shift within and between different policy siloes, improved evaluation of evidence, and harnessing complex actor-network systems for coordinated, place-based interventions. Moreover, it necessitates stakeholder engagement with upstream decision-making actors, such as funders, landowners, consultants, regulators and political leaders. The health and wellbeing outcomes of urban developments are not merely dictated by policy but negotiated and delivered by market actors and their intermediaries within a complex system governed by dynamic, fluid and temporal relations. Indeed, the very concept of planning is multifaceted, understood differently across various regional and national contexts. It can encompass not only statutory planning systems unique to individual countries, but also broader considerations about the spatial development of land use processes. In England, for instance, there is a mounting national emphasis on creating and maintaining sustainable and healthy communities. Programmes like the NHS England's Core20PLUS5 and Missions 7 and 8 of the Levelling Up and Regeneration Bill reflect this trend. They focus on health and wellbeing, aiming not only to enhance current levels but also to address the disparities between the least and most deprived areas. The focus of these initiatives illustrates the need for a comprehensive, cross-sectoral approach to urban development that effectively integrates public health considerations.

Unravelling the relationship between planning and public health

Whilst professional bodies such as the Royal Town Planning Institute (RTPI, 2020b) and international organisations such as UN-Habitat and the World Health Organisation (2020) have conducted research on prescribing what could and should be done to tackle public health problems and to integrate health into urban decision-making, their positions are often normative and practice-based. There has been a lack of systematic research to unpick the complex cross-sectoral dynamics and intricate governance arrangements of policymaking in urban planning to address public health issues. Furthermore, the path to a coordinated policy framework of planning for urban health is often impeded when actors are compelled to operate within their own bounded institutional arenas. Hence, sustaining collective action rests on having sufficiently reflexive actors to push the transformation required. To bring about change, the guidance or visioning process of plan making seeks to formulate a conception of space that can be understood by a wide variety of actors, such that it results in a collective way of 'seeing' (Healey, 2007) rather than regarding the city as a 'collective actor' (Fedeli, 2017) .

In recognition of the inherent complexities characterising urban health and planning, we advocate for *a departure from consensual perspectives and instead embrace the tensions and dynamics existing among various actors and agents*. At the same time, we seek to transcend a simplistic binary understanding of urban decision-making drivers associated with health. Recent theoretical debate has embraced Mouffe's (1999) claim of 'agonistic pluralism' that ethical conflicts are fundamentally irreconcilable and poses the challenge to quest what democratic institutions are desirable for collaborative governance. In this issue, Koksal and Wong's paper provides an exemplary illustration of boundary-spanning in action by employing Greater Manchester as a case study to delve into the intricacies of the city-region's integrated policymaking. It provides valuable insights into the dynamics and challenges associated with a cross-disciplinary approach to urban health issues. By applying boundary-spanning policy regime theory from a spatial perspective, the authors assert that an understanding of multi-scalar politics and external drivers of the policy regimes is essential to tackle health inequalities. The paper thereby offers a comprehensive and nuanced lens through which to assess the intersection of public health and spatial planning.

This special issue is rooted in the understanding that *health and wellbeing are not merely incidental outcomes of urban development and planning, but rather are integral parts of a multifaceted relationship* that requires refined understanding. Kwon and Pain's paper skilfully navigates this intricate relationship, specifically within the sphere of real estate investment and the urban development decision-making process which is metaphorically referred to as the 'black box'. Their paper emphasises the pivotal roles of various actors who serve as intermediaries in commercial real estate investment flows, and, consequently, the profound impact of their negotiations with planning actors on urban health. Grounded in Actor-Network Theory, the authors propose a new model to conceptualise the dynamic interplay involved in health-aware black box decision-making by incorporating the relations between influential urban actors and the structural elements that influence their interactions. The paper prompts further research to dismantle cultural barriers that inhibit shared understanding among real estate and planning actors of mutual priorities relevant to health and wellbeing.

Decision-making processes in urban planning and public health are inevitably shaped by the interplay between environmental regulation, human health, and urban development. Burnett and Pain undertake a critical analysis of the UK's environmental regulatory framework in their paper to demonstrate its profound implications for human health and its role within the wider context of urban development and planning. This research highlights the pressing need for regulatory frameworks to prioritise health outcomes as an integral component of environmentally sustainable urban development, a factor hitherto inadequately addressed. The authors advocate a more holistic approach for the enhancement of both environmental and health sustainability outcomes within the urban development sphere. This integrative methodology would not only fill the existing policy gap, but also ensure that urban development is more attuned to the diverse needs of the population it serves and human health as an indispensable component of all future urban development initiatives.

From the unique vantage point of Wuhan, China, the initial epicentre of COVID-19 contagion, Cheng and Li's paper charts the seismic shifts that the COVID-19 pandemic has prompted in the urban planning regimes of the city-region, which lays bare critical deficiencies in existing urban planning approaches, especially in areas of high population density. The paper firmly advocates for *a shift in urban planning towards a more people-centred approach, arguing that planning should be tightly interwoven with public health considerations*. The aim, as they propose, is to foster resilient, equitable, and sustainable urban environments. More specifically, they argue that Wuhan should alleviate the high density of its central area for poly-centric development and transition from land-centred to people-centred urban strategies.

Contributing to this special issue's discourse on the complex dynamics of urban planning and public health, Banwell and Kingham present a compelling paper by exploring the profound health implications and intricate reconstruction challenges that surfaced in the wake of the 2010/11 earthquakes in Christchurch, New Zealand. Their study casts light on the city's post-disaster regeneration effort. Instead of seizing the opportunity to build for the complex demands of the 21st century, they identify the failure of two key housing projects, Breathe and the initial Madras Square initiative, to maximise delivery of healthy development outcomes. The authors view project setbacks as indicative of broader systemic failures such as the lack of sectoral coordination and leadership, and the dominant neoliberal ethos of redevelopment that plague the Christchurch reconstruction effort. Advocating for a system thinking approach, they propose *a transformative shift towards healthier housing options and improved mobility for all*.

Drawing on a review of interdisciplinary literature in the fields of housing, health, well-being, autonomy, and social value, Emeghe and Pain's paper demonstrates the interconnection between housing quality and mental health by presenting a novel conceptual framework to illustrate how planning activity can address the gap in mental well-being aware social housing provision. The paper

identifies three key areas affecting occupants' mental well-being: individual and community autonomy, social valuation, and decision-making coordination. The authors argue for *a progressive social valuation agenda to demonstrate mental well-being additionality in housing services decision-making*. Echoing Burnett and Pain's article in this issue, they argue that current housing policies are unfavourable to poorer and more disadvantaged people and call for a radical shift in the UK's housing system and a fundamental change in the UK politics of social housing provision and planning.

The *significance of methodological innovation in urban health research to underpin urban planning decisions* is well illuminated by Niu, Tu and Silva's paper in this special issue. Their study employs a decision tree model to explore the non-linear relationship between different health determinants and the wellbeing health outcomes with health datasets of London. This creative approach signifies a substantial advancement in uniting sophisticated data science methods with urban health research. Their analysis highlights the positive influence of factors such as green cover, foreign-to-local population ratio, public transport, population density, and affordable housing supply on physical health outcomes; with high dwelling density exerting a negative effect. With regard to well-being, the paper identifies blue cover, income level, public spaces, foreign-to-local population ratio, and population density as beneficial, whereas noise pollution from railways and roads had a deleterious impact. The authors argue persuasively for the necessity for policymakers to consider these pivotal factors in urban planning to foster healthier city environments.

Finally, Peake-Jones and Le Gouais' practice note documents their first-hand experience as 'researchers in residence' embedded within practitioner teams in Greater Manchester and Bristol as part of a project investigating the causes of unhealthy urban development. They highlight the prevalent issue of translating the vast evidence linking urban environment and poor health outcomes into actionable change in urban development. The challenges they encountered include the problem's complex and dynamic nature, disciplinary differences, the multitude of involved actors, and the difficulty of applying research for long-term change. They emphasise *the importance of academics and practitioners sharing knowledge to tackle health inequalities related to urban development*. They propose a hybrid-collaborative model built on action-learning approaches. This model emphasises practitioner involvement in research and intervention design and a mutual understanding of the approach's iterative nature. They conclude that this model could be applied in other urban contexts to support the incorporation of health into complex planning and development policy and decision-making.

Emerging themes and common threads of the special issue

Despite coming from different spatial contexts and different analytical angles, the papers in this special issue collectively highlight the importance of viewing urban health as an interdisciplinary field that requires collaboration across multiple actors and sectors. They also highlight the need for resilient and progressive urban planning that is attuned to health outcomes, accountable to local communities and prepared to respond to both expected challenges and unforeseeable events. We believe that this special issue will inspire further dialogue and research in the field, ultimately contributing to the creation of healthier, more equitable, and resilient urban environments through closer collaboration between urban planning and public health researchers and professionals. A number of key themes and arguments emerged in the papers of this special issue, which would serve as pointers to guide future research and the practice of planning for health creation.

Complexity of planning systems and governance arrangements

The papers in this issue all acknowledge the urgent need to integrate public health considerations into urban planning processes. They emphasise that public health should not be treated as an incidental outcome of urban planning but rather as an integral component that requires deliberate attention and action. However, the analysis of different examples of cities across China, England and New Zealand highlights the complexity involved in different planning systems, which often involve multiple spatial

levels, different policy sectors and their associated actors. The papers also recognise that planning is a multifaceted process that encompasses various policy domains, spatial development considerations, and stakeholder engagement and, therefore, highlight the need for comprehensive, cross-sectoral approaches to urban development that effectively integrate public health considerations. A few papers (e.g. Banwell and Kingham, Cheng and Li, Koksal and Wong, Kwon and Pain) also shed light on the challenges, tensions, and complexities associated with integrating planning and public health, emphasising the importance of understanding the dynamics among diverse actor groups and policy sectors. It is this complexity that indicates that one size fits all planning solutions are not a solution. A more reflexive, agile and flexible approach to deliver long term visions as well as managing uncertainties is the way forward. In response, it is an important future research direction to unpack this complexity further by applying complex systems theory through innovative approaches such as causal loop diagrams, actor-network analysis, agent-based modelling and human-environment interaction modelling to encourage the behavioural shift of actors towards health-aware urban development and planning and to evaluate the impact of these changes on population health and wellbeing.

Collaborative governance, public participation and community engagement

Collaboration and stakeholder engagement are key themes across the papers. They underscore the importance of cross-sector collaboration, governmental support, and the strategic deployment of boundary-spanners to facilitate collaboration among relevant parties. Several papers delve further into the intricate governance arrangements in their case studies, for example, in post-pandemic Wuhan (Cheng and Li), post-disaster Christchurch (Banwell and Kingham), as well as in the context of a devolved combined authority (Koksal and Wong) in England. Besides the case for cross-sectoral policy integration, there is a strong argument for a people-centred approach to planning, with public participation and community engagement seen as critical to improve the health wellbeing of the urban population. Collaborative planning is important in two respects, on the one hand, to influence urban development decision-making for the benefit of people and population health and, on the other hand, to promote the empowerment, autonomy and equality of individuals and communities connected to health and wellbeing, for example in social housing (Emeghe and Pain).

Institutional design and innovative approaches

The papers emphasise the need for meaningful engagement and knowledge exchange between academics and practitioners to address health inequalities related to urban development. This knowledge exchange can take different forms, ranging from an embedded researcher with practitioner model (Peake-Jones and Le Gouias), through the development of Health Impact Assessment evaluation system (Banwell and Kingham), and to the development of Complete Community Plans (Cheng and Li). The changing needs of urban communities and their wellbeing also mean that there is a need to design resilient and sustainable urban planning that prioritises health outcomes (e.g. Burnett and Pain, Cheng and Li, and Emeghe and Pain). They highlight the role of planning and built environment regulation, human health, and urban development in shaping health outcomes and advocate for holistic approaches that consider both sustainability and health within the urban environment and development sphere, which can help inform recent policy directions for urban development such as the 15-minute city and put health in the centre stage.

Theories and methods for translational knowledge exchange

Rather than framing the research from a top-down, normative perspective, the collection of papers in this issue attempts to unravel the urban planning and health disconnect problem by applying different theories, methods and data sources. Examples are the application of actor network theory by Kwon and Pain to strengthen theoretical understanding of the health-aware urban decision-making black box, and the adaptation of boundary spanning regime theory with spatial perspectives by Koksal and Wong to understand the policy integration regime in Greater Manchester. The innovative use of data

science techniques by Niu, Tu and Silva to integrate disparate data sets to understand the determinants of physical health and wellbeing outcomes in London via the decision tree methodology shed light to future research directions. Similarly, the use of an action-learning approach by Peake-Jones and Le Gouias offers an alternative route of co-creation of data and intelligence through their proposed hybrid-collaborative model. Indeed, the collective of papers points to the importance of incorporating first-hand robust and usable data in further research to plug the health aspect into public and private sector decision-making strategies and tools (e.g., urban investment and social valuation) at different urban scales.

These common threads reflect the shared goal of promoting healthier, more equitable, and resilient urban environments through the integration of public health and urban planning. They contribute to a more comprehensive and nuanced understanding of the challenges, dynamics, and outcomes associated with this integration, providing valuable insights for researchers, policymakers, and practitioners in the field.

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Authors' note: The authors are listed in reverse alphabetical order.

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DATA AVAILABILITY

The data reported in this paper consist of primary interview and secondary data. A redacted and anonymized version of all primary interview data will be made available via the University of Bristol Research Data Repository data.bris two years after the completion of the project, Tackling the Root

causes Upstream of Unhealthy Urban Development (TRUUD). All secondary data used in this paper are available at locations cited in the 'References' section.

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