REVIEW

REVISED Migration, Urbanism and Health: Moving Toward Systems-Informed Policy and Practice

[version 2; peer review: 1 approved, 3 approved with reservations]

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Abstract

Migration and displacement are pivotal determinants of urban health, influencing both direct and indirect health outcomes. Migrants may face unique health risks, often exacerbated by economic, social, and environmental factors encountered during transit or upon resettlement. As migration patterns shift due to geopolitical, climatic, and economic pressures, they reshape the global and urban policy landscapes in unpredictable ways, presenting challenges that will continue to evolve in the coming decades. Many current legal frameworks do not adequately account for migrant populations, hindering effective policy responses. Therefore, effective urban health interventions must be inclusive of migrant populations and expand beyond healthcare services. A systems-thinking approach that recognizes the broader determinants of health—including housing, employment, social services, and urban infrastructure—is essential to address the intersecting challenges migrants face. Despite these

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challenges, migration remains crucial to the functioning of urban environments. Migrant workers consistently contribute to the healthy operation of cities, underpinning key infrastructure and services. However, to optimize policy responses and improve urban health outcomes, more robust data and evidence on the health risks and outcomes of migrants, as well as the structural drivers of migration, are needed. Moreover, macro factors such as climate change, future pandemics, and geopolitical shifts are likely to influence both migration dynamics and migrant health. This paper explores links between migration and urban health and identifies implications for policy and practice. It draws from a qualitative review of policy documents, academic literature, and illustrative examples from selected urban contexts. The paper calls for integrated, equity-oriented strategies that consider the structural and social determinants shaping migrant health. A systems-informed and holistic vision of urban health is required to integrate migration into the broader urban policy and planning frameworks to foster healthier, more resilient cities.

Keywords
Migrant health; Migration and displacement; Urban policy and migration; Health determinants; Public health; Migrants; Refugees

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REVISED **Amendments from Version 1**

This revised version incorporates changes in response to peer review. The Abstract has been updated to more clearly articulate the paper's aim and conceptual methodology, reflecting its evidence-informed and illustrative approach. The Introduction has been expanded to clarify the paper's scope—focusing on urban settings in low- and middle-income countries—and to better explain how migration modifies urban health challenges.

In Section 3, clarifications were made to terminology (e.g., "deviant behaviors") and one reference was added to support context-specific claims. The section on systems frameworks was revised to highlight the relevance of systems-thinking.

In Section 4, we critically reflected on research gaps in migration and urban health, noting the dominance of descriptive work and the lack of intersectional or longitudinal studies. We also expanded the methodological discussion to include mixed-methods, participatory, and complex systems approaches. Ethical considerations around mobility tracking were explicitly addressed, along with mitigation strategies such as data anonymization and participatory governance.

The Conclusion was revised to explicitly reconnect with the paper's key messages and to offer clear, policy-relevant takeaways for urban planners, health professionals, and decision-makers. These emphasize the need for integrated, systems-informed strategies that center migrants within urban health agendas.

Finally, the manuscript was carefully reviewed for grammar, syntax, and clarity, ensuring greater readability and alignment with the plain-language guidelines of the Issue Paper series.

Any further responses from the reviewers can be found at the end of the article

Content sections

1. Key messages
2. Introduction
3. Findings
4. Priority data and research

1. Key messages

- Migration and displacement are key determinants of urban health, both via direct exposures to health risks and as mediated by social or economic factors experienced by those on the move.
- Migration and displacement are changing the global and urban policy landscape in significant and unpredictable ways and will continue to do so in coming decades.
- Pre-existing legal frameworks often do not account for migrant populations, complicating policy responses to ongoing migration.
- Migrant-inclusive urban health interventions must go beyond health services and address the multiple, wider, intersecting systems that influence health risks and outcomes.
- Migration and migrant workers consistently contribute to the healthy functioning of cities and urban infrastructures.
- Responding to the challenges and opportunities posed by migration requires more robust evidence on migrant health risks and outcomes and the structural drivers of population mobility.
- A systems-informed, holistic vision of how migration interacts with other urban systems is fundamental to achieving the best urban health outcomes.
- Climate change, future pandemics, and geopolitics are among the macro factors that shape migration dynamics and migrant health outcomes; more work is needed to understand short and longer-term future impacts.

2. Introduction

Migration and displacement have become increasingly salient issues in the global health landscape. The vulnerabilities and opportunities associated with mobility and urbanization need to be better addressed and accounted for, particularly given that migrants and displaced people represent a heterogeneous group with varied circumstances, experiences and contributions.

Box 1. Overview of migration terms used in the paper

Asylum seeker. A person who is seeking international protection.[1] Prior to being granted legal status in the destination country, refugees are termed asylum seekers. Not all asylum seekers will be granted refugee status.

Refugee. According to the 1951 United Nations Convention and its 1967 Protocol Relating to the Status of Refugees, under international law and UNHCR's mandate, refugees are individuals living outside their countries of origin who are in need of international protection because of feared persecution, or a serious threat to their life, physical integrity or freedom in their country of origin as a result of persecution, armed conflict, violence or serious public disorder.[2]

Migrant. According to the IOM, a migrant is an "umbrella term, not defined under international law, reflecting the common lay understanding of a person who moves away from his or her place of usual residence, whether within a country or across a border, temporarily or permanently, and for a variety of reasons".[3]

Internal migrant. A person who has moved within internationally recognized state borders and includes rural-to-rural migration and rural-to-urban migration.[4]

International migrant. Defined by the United Nations Department of Economic and Social Affairs as any person who changes his or her country of usual residence.[5]

Migration and displacement are key determinants of health, potentially affecting epidemiological patterns of chronic and infectious diseases, mental health issues, among others. Additionally, migrants and displaced persons may face barriers in accessing healthcare and other basic services (e.g., water, sanitation, housing, safe and nutritious food, safe and fair employment) due to language, cultural, or economic factors. They may have elevated risks of injury, either during the migration journey or because of unsafe living or working conditions at their destination country.

Migration to urban areas, whether between or within countries, is a defining issue for cities. Increasingly, urban health planning is considering migration patterns, migrant health characteristics and migrant-inclusive services. While global dialogue often focuses on international migration, internal migration, especially in low- and middle-income countries (LMICs), is more prevalent. Specifically, rural to urban migration is a modern feature of LMICs, particularly given the impending effects of climate change and loss of rural livelihood options.

Urban health challenges are uniquely shaped by migration through several mechanisms. Migrants may concentrate in underserved neighborhoods where infrastructure is inadequate, increasing strain on services such as housing, sanitation and healthcare. Urban planning systems may not be responsive to undocumented populations or people on the move, creating mismatches in service provision. Further, migrants may experience exclusion from formal systems of social protection and labor, compounding vulnerability in environments already marked by inequity. These dynamics require integrated responses across sectors and levels of governance.

This paper considers both international and internal migration—including rural-to-urban migration—focusing on how these forms of mobility affect health equity in urban settings, particularly in LMICs. It explores the relationships between migration and urban health and outlines potential implications for policy and practice. It examines how urban health advocates, practitioners and migrants themselves might respond to migration challenges and considers holistic approaches to urban health in the context of migration.

3. Urban health and migration: what do we know?

3.1 A snapshot of current migration in urban settings

The global movement of people, whether within borders or across them, is growing. As of 2020, worldwide estimates indicated that roughly 281 million individuals were international migrants, making up 3.6% of the global population. This number represented an increase of 128 million from 1990 and was over three times the estimated count in 1970.[6]

Migration is determined by various determinants or drivers of individual and population mobility. The decision to migrate is influenced by circumstances in countries of origin, transit, and destination. Drivers of migration include economic, demographic, environmental, social, and political factors. People often move to improve their quality of life, access better

opportunities for work or education, or escape conflict, violence, instability, persecution, or crises. Because urban centers are often seen as providing opportunities and better security, migration can contribute significantly to urban expansion.

The various types of migration contribute differently to urban growth and diversity in various contexts. International migration contributes to cultural diversity in high-income countries. Immigration adds to urban population growth, and in some contexts more so than growth from natural increase. Where both are high, as in some low-income countries, exceptionally high rates of urban growth are observed.

Frequently, in LMICs migrants in megacities live in informal settlements and makeshift camps and, increasingly, intermediary cities also let unplanned settlements grow unchecked. Such living conditions place migrant populations at risk of poor health outcomes [1]. More importantly, a lack of anticipatory planning, zoning, and building of infrastructure can lead to the costly and inefficient extension of services and more adequate shelter as an afterthought.[7] In addition, policy fragmentation across local and national levels may discourage health-oriented urban planning if city governments responsible for other essential services are not as accountable for health as are national health authorities.

Current estimates indicate that 169 million people are international migrant workers[8] – a figure that does not include the millions of internal migrant workers, nor refugees and forcibly displaced populations who *become* migrant workers in urban areas. And yet, extraordinarily little attention, and less action, focuses on migrant workers, despite figures that indicate that migrant workers are more than three times more likely than non–migrants to be in conditions of forced labour.[9] A systematic review found that compared with non-migrant workers, migrant workers were 45% less likely to use any health services.[10] Migrant workers, whether cross-border or internal migrants, are also over-represented in industries exposed to higher risk of occupational injury and fatality.[11]

At least 10.1% of all international migrants are children, and many of them migrate unaccompanied or become separated from their parents.[6] Apart from sharing the vulnerabilities experienced by adults, children in urban centers are at an increased risk of, at minimum, homelessness, becoming exposed to hunger and violence, and being coerced into panhandling and micro-trafficking.[12] Although rural-urban migration is more common among younger people, growing numbers of people aged 60 years and older are moving to urban areas around the world.[13]

3.2 Determinants of health in the context of migration and urban health

The Dahlgren and Whitehead model of the social determinants of health includes different factors that can affect and impact health – including individual, lifestyle, social and community factors and working and living conditions.[13] The WHO Commission on Social Determinants of Health (2008) requested that urban governance and planning explicitly address equity, as cities can concentrate threats to health.

Social and structural determinants of health substantially influence the health and the integration of migrant populations in urban settings. For example, state regulations that fail to provide migrants with basic services, including safe housing, social protection, and healthcare, set the foundation for poor health outcomes. Other structural issues, like the segregation of migrant communities in less desirable neighborhoods on the outskirts of many cities, contribute to a lack of access to services and generate new health risks, for example those associated with long commutes or neighborhood safety or environmental hazards.

Intersectional considerations often further increase risks for many migrants. For example, inequitable gender norms sustain isolation and abuses experienced by female migrants. Female migrants, especially asylum-seeking and refugee women and girls, are particularly vulnerable to physical and sexual violence[14] and early or forced marriage.[15] Migration-related discrimination can amplify pre-existing gender inequalities, leaving abuse survivors less able to access protection or services for sexual, reproductive, and mental health. Even where social protection is ensured, access to healthcare services may be influenced by migratory status in other ways. International migrants, especially those in marginalized situations, may face sociocultural challenges such as language barriers and lack of familiarity with the health system,[16] as well as a lack of culturally appropriate services.

In some countries, “health navigator” programs train and certify community health workers to provide free assistance to migrants in their own language. Mobile phone health tools can also support the interventions of community health workers[17] in countries with high mobile phone coverage, including by teaching the local language to improve health literacy. Community centers are also important health promoting sites, providing access to computers, internet, and other

[1]https://unhabitat.org/sites/default/files/2020/12/regional_is_report_final_dec_2020.pdf.

digital resources, for example. Here, migrants can access health information and communicate with government agencies and other organizations (including to schedule healthcare appointments). Such centers can also provide other services important to health such as safe spaces to socialize, play and engage in physical activity that may be scarce in urban environments. Ultimately, greater connectivity and community center-based engagement are also useful to encourage and support participation in the decision-making processes of government agencies and other organizations to better address the needs of migrant populations.

3.3 Integration and social cohesion: impact on health and well-being

Integration in host communities is a significant issue for many migrants, who often experience disadvantage relative to native residents in many aspects of daily life.[18] Migrant populations can encounter challenges with respect to adaptation and integration, including competition and conflict among people, groups, and cultures. Adjusting to a new urban lifestyle can mean supplementing, or at times replacing, old social support systems and cultures with new ones. Challenges like securing housing, finding work, and dealing with peer pressure from family and relatives can lead to heavy psychological burdens and resulting mental health challenges[19] like anxiety, despair, tension, low self-esteem, and loss of control.[20] Among the many factors affecting mental health, the social environment has been shown to have a significant impact.[21]

Social cohesion, which describes the degree of comradery and solidarity within a community,[22] can be crucial in promoting the mental health and general wellbeing of migrants. Strong social cohesion can give people a sense of support and belonging, which can act as a protective barrier against the negative effects of trauma and displacement. Programs for linguistic and cultural orientation, community-building initiatives, and specialized mental health interventions are a few examples of supportive approaches to build cohesion. Social cohesion can affect migrants' mental health through three general mechanisms.[23] First, it can encourage health-related activities and norms and help discourage harmful behaviors such as substance abuse, violence, or social isolation, through shared expectations and informal community accountability. Second, it can promote social organization, making it simpler for people to access health services. Third, it can influence psychosocial processes like offering emotional support, raising self-esteem, and fostering mutual respect. In addition, communities where people trust one another are more likely to offer assistance and support, which can help to promote mental health.[24]

3.4 Migrant-inclusive urban health: A systems framework

To promote urban health that genuinely includes migrants, changing the functioning of the health system alone, while crucial, is insufficient. For instance, reducing high risks of road traffic fatalities or respiratory disease due to air pollution among migrant workers depends not only on including them in data collection by health information systems, design of appropriate health promotion information, and access to health services, but also on policy decisions within the transport, energy, and planning sectors, among others. And, vice versa: even if health promotion activities and health services are geared to include migrant workers, services may go unused without accurate data about which groups of workers are affected and how to reach specific groups, such as day laborers, who may be reluctant to lose wages to seek care.

Figure 1 proposes a migrant-inclusive urban health framework to indicate various systems that might interact to affect the health of migrants. The outer spheres of Figure 1 represent multiple systems that can affect health beyond the health system alone. At the centre are "people", "communities," and "cities" to indicate that these systems behave in ways that affect individual migrants, migrant subgroups (as defined by nationality, legal status, work sector, etc.) and the health patterns of urban populations of migrants *and* non-migrants. These systems can also influence epidemiological risk and outcome patterns (e.g., infection and non-infectious diseases, nutrition, mental health) that include or exclude migrant groups and determine how well health information systems track disease patterns. Similarly, actions of multiple systems, such as immigration systems, health systems and employment practices, often combine to determine whether migrants are exposed to health hazards, whether they know their rights and entitlements and whether they work in safe and fairly paid jobs. Finally, civil society often fills in gaps where health systems or government services are not available for migrants.

The systems framework suggests that creating inclusive urban health will require going beyond health sector services, and addressing the important integration influences, such as social networks and community engagement, which can provide highly valued psycho-social support and help communicate health-related information.[25] Central to all these health-inducing factors are legal structures and budget allocation systems to support migrant health amidst increasing urbanization. Evidence suggest that these frameworks are crucial in ensuring migrant health: non-health-targeted public policies can significantly affect migrant health.[26] This underscores the need for a holistic approach to migrant health that considers the broader policy environment. Policies that promote social inclusion, provide easier access to healthcare, and support economic integration can significantly improve health outcomes for migrants.

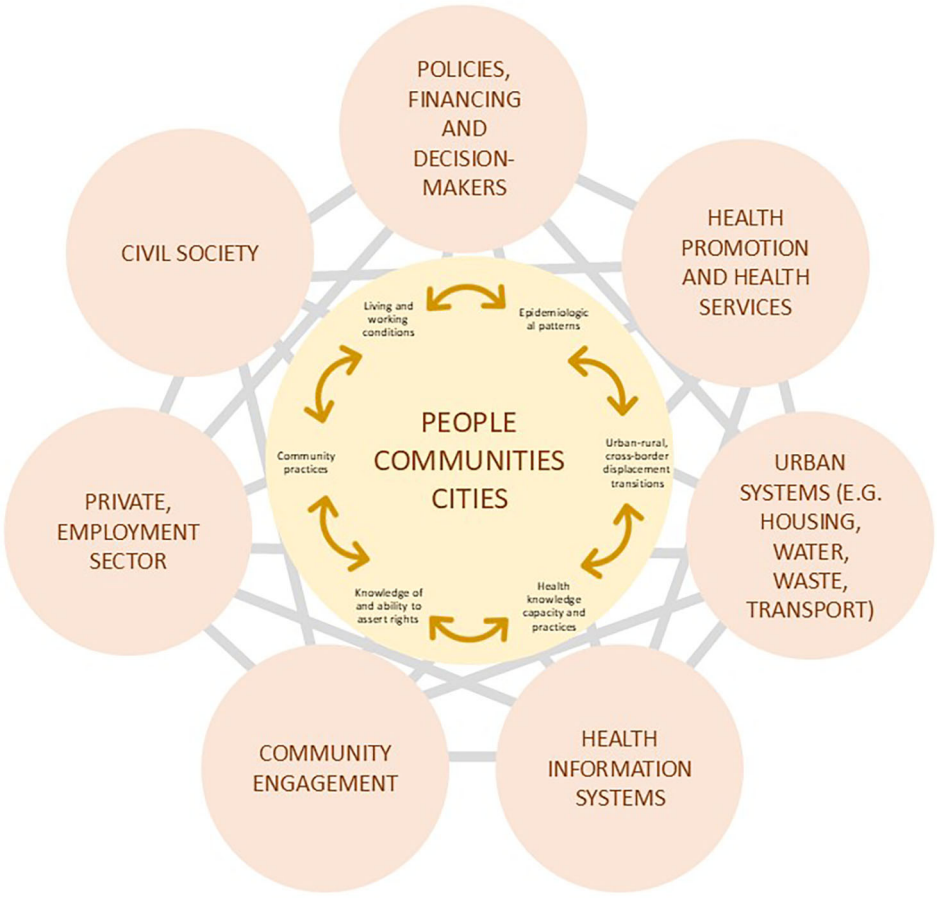

Figure 1. Systems-informed urban health response to migration-related health needs.

A strategic and integrated approach to migration and urban health[27] must rely on the recognition that migration health is influenced by decisions made at various levels, from global to local, within and beyond the health sector. The ethical challenges in these decisions impact the provision and accessibility of healthcare services; it is crucial to consider specific ethical dimensions and vulnerabilities in each context.[28] Values such as solidarity, duty, equity, trust, and reciprocity, are central to addressing the health needs and rights of migrants.

Moreover, migration requires effective multilevel governance of migration-related issues at local, national, and international levels. At the local level, this means building alliances and partnerships, raising awareness in the population, and supporting the development of migrants' potential in their new home. In many contexts, the spontaneous formation of numbers of local, voluntary associations and groups is quite common, driven by a moral duty of care. These can be extremely valuable because they develop detailed knowledge and respond quickly during emergencies. Local authorities need to support and involve such groups, especially where emergencies become prolonged. Because such groups often support undocumented migrants, on the edge of legality, they may be excluded from government action, yet this may set up serious tensions and conflicts within the local population.

To address this multiplicity of influences requires a holistic approach that encompasses all aspects of migrant health, including decent housing, access to basic services, social participation, decent work, emergency preparedness, and mutual support and social cohesion with native populations. A holistic approach transcends the strictly medical aspects of health care, recognizing the importance of a broader perspective for achieving migrant health in all aspects of their lives, and therefore public health for all. Promoting healthy lifestyles and prevention among migrants is also critical to long-term health trajectories, as exemplified by the long-term experiences of the *WHO Healthy Cities* project.[29]

4. Data and research: what evidence is needed to promote urban health equity?

Strategic, integrated action to improve urban health and health equity in the context of migration requires accurate, efficient, and timely data that builds on the existing evidence base. Below we highlight priority areas for new research.

In addition to those highlighted, the first WHO Global research agenda on health, migration and displacement outlines key global research priorities and acts as a framework and guide for prioritizing research in this area.[30] This framework can be used as a catalyst for further research in emerging areas such as urban health and migration, and to strengthen research activities and translation into policy and practice on the topic at regional and national level.

Priority research areas

A local and global lens. Detailed information on local urban settings is important for understanding and developing context-specific interventions to improve urban health and health equity in the context of migration. However, understanding global factors influencing the movement of people—particularly between and within low- and middle-income countries in the Global South, which host the largest numbers of migrants—is critical not only to global and regional action but for local interventions. Cross-country research on migration and urban health would supplement focused local studies by learning across two or more countries, e.g., using comparable administrative data, to examine key questions (see below).

Population mobility. Population mobility tracking, both between and within countries, will help understand how urban settings affect health and vice versa. Some countries have adopted dispersal policies for new arrivals, particularly for refugees and asylum seekers, seeking to deconcentrate migrant groups and to match them to available resources such as housing and health services.[31] However, the tracking of mobility—particularly when involving personal or location data—may lead to unintended consequences, such as privacy violations, inappropriate use of data beyond public health purposes (e.g., for immigration control), or feelings of being monitored among migrant populations. These risks can reduce trust in health systems and discourage participation in research or public services.

To mitigate these risks, it is essential to apply strong ethical safeguards: ensuring informed consent, protecting data anonymity, establishing clear limits on data use, and involving independent oversight. Participatory approaches that engage migrant communities in the design and governance of data systems can further enhance transparency, trust, and relevance. On the other hand, understanding the factors driving mobility within countries, including both push and pull factors, to and away from and within urban contexts, and circular and seasonal migration is important for urban health decision-making.

Pandemics and other health stressors. COVID-19 had a significant effect on the flow of migration between and within countries and threw a spotlight on urban health inequities, including the role of the built and social environment and health resourcing. Data collected over the pandemic about health impacts and inequities and examining this through a migration lens are important both in terms of learning about some of the drivers of health inequities and in terms of preparedness for future health events – e.g., decision making about distribution of health infrastructure and resources and consideration of specific requirements of migrants in any public health measures.

Structural drivers. Complex upstream and downstream determinants of health influence outcomes in urban settings and understanding the structural drivers of urban health inequities associated with migration will contribute to informed health decision-making. For example, policies of nation states vary regarding settlement of migrants, including refugees and asylum seekers. These policies include immigration laws (e.g., mandatory detention of asylum seekers arriving by boat in Australia or regional resettlement policies that direct new arrivals away from urban areas). Influential policies also include housing and industrial relations policies that intersect with immigration policies (e.g., lack of social housing, poor social security safety nets). The Health in All Policies approach, championed by the WHO, emphasizes that non-health sectors should consider health impacts. Examining, for example, how migration and other policies affect health would provide evidence to transform policy- related structural drivers.[32]

An intersectional approach. In addition to structural drivers, migration related-health inequities in urban settings are also influenced by oppression and discrimination, such as racism, sexism, agism, ableism, and heteronormativity.[33] It is essential to understand how these systems impact health, both in the policies around migration and the day-to-day experiences of migrants in urban areas. For example, policies can affect housing or employment discrimination and inequitable resource distribution for health and other services that are targeted away from areas of high migration settlement.

Two-way integration. Integration is a two-way process of mutual accommodation between incoming and receiving communities and affects the health of migrants. However, research has tended to focus on the extent to which migrants are able to adapt to their new communities (e.g., securing work, housing, etc.), rather than how receiving communities may themselves adapt and change.[34] Further data are required in urban settings on attitudes towards accommodation of

receiving communities as well as the effectiveness of interventions to improve receiving community social environments (e.g., the Welcoming Cities initiative in Australia that accredits local areas for their efforts to promote inclusion and diversity[35]) and examination of the ways that employment or other systems evolve and adapt to respond to the needs of migrants.

Political will. More evidence is needed on the social and economic impacts of migration at the levels of cities and whole societies and on how different migration policies affect a range of societal goals. A better understanding of how to secure benefits and counter potential risks from migration will inform political debates and counter xenophobia, while opening the door to more effective approaches to urban health.

Nature of approaches and types of data. Advocacy for improved health equity in urban settings requires the centering of **lived experience**, both of incoming and receiving communities, making the voices of refugees and migrants heard through participatory research approaches. It is also crucial to have intersectional and interdisciplinary approaches, including mixed-methods designs, for data collection and analysis in migration and urban health research.[36] Research efforts should also be supported by data linkage approaches that enable existing datasets to be integrated and re-used to answer more comprehensive questions spanning focus areas. Longitudinal research designs are particularly important, as they can answer questions about causality, long-term health trajectories, and time-lag effects of urban migration on health outcomes. Furthermore, applying complex systems thinking[37] and implementation science can provide unique perspective on the upstream structural and social determinants of health in urban settings. These methodologies not only capture the interconnectedness of influencing factors, but can also enhance the translation of evidence into policy and practice by identifying leverage points for action.

Despite the expanding literature on migration and urban health, several critical gaps persist. Much existing research is fragmented, limited to descriptive studies, or focuses narrowly on access to health services, often overlooking structural, political, and systemic factors that shape health outcomes. There is a lack of longitudinal and comparative studies that examine causation, temporal dynamics, or policy effectiveness. In particular, insufficient attention has been given to how intersecting factors compound health inequities in urban settings. Additionally, limited data availability, inconsistent definitions, and ethical concerns around data use (especially in mobility tracking) hinder deeper insights. Addressing these limitations is essential to informing more effective, context-sensitive, and equity-oriented urban health policies and practices.

5. Conclusion

For urban health strategies to be effective, governments and other decision-makers must take account of the contemporary reality of population mobility and the fundamental contribution of migrants to the functioning of cities and urban health. This directly responds to the recognition that migration and displacement are key determinants of urban health and that migrant workers consistently support urban infrastructures. To promote inclusive urban health responses, decision-makers must remain alert to practical health-promoting strategies that do not expect migrants to reach the services, but instead reach out to migrants where they live and work, including interventions such as outreach initiatives and mobile clinics, as well as ensuring that policy settings are reflective of people's needs.

Recognizing the social determinants of health of migrants who may be exposed to multiple health risks, also means adopting systems science perspectives.[38] Systems science perspectives recognise the complexity of health influences and the interactions between health intervention opportunities. To promote urban health that includes mobile populations, strategies need to go beyond narrow 'health systems' approaches by harnessing the interactions between the many health-influencing systems (e.g., immigration, financial, social, political). This reiterates the call for a systems-informed, holistic approach to urban health—one that addresses not just healthcare access but also the structural and policy-level drivers. Evidence repeatedly indicates that establishing good coordination between these multiple systems will help advance migrant-inclusive urban health responses.[39] Hence, legal frameworks must evolve and that intersecting systems must be aligned to address health risks effectively.

Among the greatest risks to inclusive urban health in most settings are the political winds that fuel the fires of discrimination against diversity. Xenophobic and exclusionary rhetoric readily hinders the gears of those systems that could be including migrants in one-health strategies. Future urban health depends on building political will for change and on migrants and non-migrants joining together to design systems strategies that treat health as a mutual priority, because "there is no *they* but only *us*".

Therefore, to promote urban health, it is fundamental to prioritize migrants' health by ensuring policies that are built on evidence-informed decision-making. Doing so will not only address immediate service gaps but prepare urban health

systems to respond to emerging challenges such as climate change, future pandemics, and geopolitical shifts—macro factors that will continue to shape migration patterns and outcomes.

Ethics and consent

Ethics and consent not required for the performed study.

Data availability

No data are associated with this article.

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Open Peer Review

Current Peer Review Status: ✔ ? ? ?

Version 2

Reviewer Report 30 July 2025

https://doi.org/10.5256/f1000research.183567.r395623

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AKM Ahsan Ullah
Universiti Brunei Darussalam, Bandar Seri Begawan, Brunei

I have read the article *"Migration, Urbanism and Health: Moving Toward Systems-Informed Policy and Practice"* with interest. To my view, this is a good contribution to contemporary migration and public health scholarship. The authors address a growing gap in the intersection of urbanization, health equity, and human mobility by proposing a systems-informed, holistic policy framework. The article is relevant in the context of increasing global migration, climate-induced displacement, and urban health disparities in low- and middle-income countries (LMICs). Its emphasis on social determinants of health, two-way integration, and structural drivers of inequity aligns it with critical debates in global health justice, urban studies, and migration governance.
The article is built upon a qualitative synthesis of policy documents, academic literature, and illustrative case references. The integration of the Dahlgren-Whitehead model and systems-thinking frameworks sound good to me. However, the paper could be strengthened by specifying criteria for literature inclusion, incorporating more empirical case studies, and clearly distinguishing between internal and international migration in urban settings. The theoretical framing is relevant and effectively explains the multifactorial nature of health inequities, although it could benefit from deeper engagement with intersectionality theory and decolonial urbanism literature.
The revised version successfully incorporates most reviewer suggestions. The authors improved the abstract, clarified scope and terminology, expanded the discussion of systems-thinking, and added ethical reflections on data use. However, I see some issues the author can think about to better their work.
First, the findings are conceptually rich but not empirically grounded.
Second, although the conclusion is stronger in linking back to key messages, more actionable recommendations for specific stakeholders would improve its policy utility.
Third, dominant literature on postcolonial urban health (e.g., Lawhon, Lancet Migration) is underused.
Fourth, the paper still conflates types of migration (e.g., refugees, internal migrants) without sufficient analytical distinction.
Fifth, despite highlighting participatory approaches, migrant voices are largely absent from the analysis.

Is the topic of the review discussed comprehensively in the context of the current literature?
Partly

Are all factual statements correct and adequately supported by citations?
Yes

Is the review written in accessible language?
Yes

Are the conclusions drawn appropriate in the context of the current research literature?
Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: https://fass.ubd.edu.bn/staff/profiles/ullah.html

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Reviewer Report 15 July 2025

https://doi.org/10.5256/f1000research.183567.r393656

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Cheng Chow
The University of Texas at Austin, Austin, USA

Thank you for the opportunity to review this article. This revised version represents a strong conceptual and policy-oriented contribution to the migration health literature. However, a few minor issues should be considered to enhance clarity and impact:

It would be helpful to explicitly state that this is a conceptual synthesis informed by existing literature and policy documents. If possible, also consider specifying the LMIC focus earlier in the abstract to better align with the scope outlined in the introduction.

While the paper is conceptually rich, it would benefit from a few illustrative empirical examples to demonstrate how the proposed systems framework has been or could be applied in real-world contexts. These would help to ground the recommendations and increase policy relevance.

Although both international and internal migration are acknowledged, the manuscript could more

clearly delineate how health challenges and governance responses vary across migration types (e.g., circular, seasonal, or protracted displacement). This would add nuance to the discussion and improve its utility for diverse policy audiences.

The manuscript refers to itself as a "qualitative review," but more detail would enhance transparency. I recommend briefly outlining the search strategies, inclusion criteria, or types of sources used (even informally). It would also be helpful to clarify whether the review is best characterized as a narrative synthesis, scoping review, or policy mapping exercise.

Is the topic of the review discussed comprehensively in the context of the current literature?
Yes

Are all factual statements correct and adequately supported by citations?
Partly

Is the review written in accessible language?
Yes

Are the conclusions drawn appropriate in the context of the current research literature?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: My research lies at the intersection of migration, health, and policy.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Reviewer Report 15 July 2025

https://doi.org/10.5256/f1000research.183567.r392969

Johannes Bhanye
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Ruvimbo Shayamunda
Faculty of Natural and Agricultural Sciences, Urban and Regional Planning, University of the Free State, Bloemfontein, Free State, South Africa

The authors significantly improved their manuscript and I recommend for indexing.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Migration, urban studies, climate change

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

Reviewer Report 29 May 2025

https://doi.org/10.5256/f1000research.173821.r373586

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Nadia Charania
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Thank you for the opportunity to review this important and timely piece that proposes a migrant-inclusive urban health framework drawing from systems-thinking and a holistic model of health. The manuscript is well-written, and the recommendations it presents are both practical and relevant for advancing health equity in urban contexts by drawing attention to the important role of migration. I believe this work will be of significant interest to many academics, practitioners, and policymakers. I only have a few minor suggestions for improvement, outlined below.

- The *Abstract* reads well and introduces the broad context within which the presented arguments are made. One minor suggestion would be to make the aim and focus of the paper clearer, perhaps by adding a sentence similar to the last two sentences of the Introduction section.
- In section 3.1 *A snapshot of current migration in urban settings*, for the sentence that reads "Frequently, migrants in megacities live in informal settlements and makeshift camps and, increasingly, intermediary cities also let unplanned settlements grow unchecked" - it would be helpful to clarify which context (e.g., LMICs) this is referring to and include a supporting reference.
- In section 3.3 *Integration and social cohesion: impact on health and wellbeing*, for the sentence that reads "First, it can encourage health-related activities and norms and exerts social control over deviant behaviors." It would be helpful to clarify what it meant by 'deviant behaviors'.
    - Also, the authors may wish to highlight some successful examples thereby providing evidence for the participation and inclusion of migrant voices.
- In section 3.4 *Migrant-inclusive urban health: A systems framework* – it would be helpful to include more literature here about systems-thinking and the value of incorporating complex systems thinking into these areas.

- In section 4 *Data and research: what evidence is needed to promote urban health equity?* several priority research areas are proposed. It would be helpful to outline any potential unintended consequences and how to mitigate these. For instance, in relation to the proposed research area of population mobility, there may be some unintended consequences of such population mobility tracking.

Is the topic of the review discussed comprehensively in the context of the current literature?
Yes

Are all factual statements correct and adequately supported by citations?
Yes

Is the review written in accessible language?
Yes

Are the conclusions drawn appropriate in the context of the current research literature?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: global health, migration, health behaviours

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 11 Jun 2025

Palmira Immordino

We sincerely thank the Reviewer for the thoughtful assessment of our manuscript. We greatly appreciate your recognition of the paper's relevance, clarity, and contribution to advancing migrant-inclusive urban health. Below we provide a point-by-point response to each of your comments. Reviewer comments are presented in **bold**, followed by our responses in plain text:

- The *Abstract* reads well and introduces the broad context within which the presented arguments are made. One minor suggestion would be to make the aim and focus of the paper clearer, perhaps by adding a sentence similar to the last two sentences of the Introduction section.

Thank you for this suggestion. In response, we have revised the Abstract to more clearly articulate the aim and focus of the paper, drawing on the final two sentences of the Introduction. The revised Abstract now explicitly states the paper's objective to explore the relationships between migration and urban health, and to consider implications for both policy and practice.

- In section 3.1 *A snapshot of current migration in urban settings*, for the sentence that reads "Frequently, migrants in megacities live in informal settlements and makeshift camps and, increasingly, intermediary cities also let unplanned settlements grow unchecked" - it would be helpful to clarify which context (e.g., LMICs) this is referring to and include a supporting reference.

We have revised the sentence to clarify that the trend described primarily refers to low- and middle-income countries (LMICs), where rapid urbanization and limited planning capacity often contribute to the expansion of informal settlements. Although the Issue Paper format encourages reference limits, we considered the need for clarity and evidence particularly important in this case. Accordingly, we have included a supporting reference to substantiate this point and enhance the credibility of the statement.

- In section 3.3 *Integration and social cohesion: impact on health and wellbeing*, for the sentence that reads "First, it can encourage health-related activities and norms and exerts social control over deviant behaviors." It would be helpful to clarify what it meant by 'deviant behaviors'.

- **Also, the authors may wish to highlight some successful examples thereby providing evidence for the participation and inclusion of migrant voices.**

Thank you for these thoughtful comments. We have clarified the term "deviant behaviors" in the text to reflect its intended meaning—i.e., health-risk behaviours such as substance misuse or interpersonal violence that may be moderated through strong social ties and community norms.

With regard to your second suggestion, we fully agree that the inclusion of migrant voices is essential to understanding social cohesion and promoting equitable health outcomes. Due to the concise nature of the Issue Paper format and the editorial guidance to avoid detailed case studies, these examples have been kept short and policy-oriented.

- In section 3.4 *Migrant-inclusive urban health: A systems framework* – it would be helpful to include more literature here about systems-thinking and the value of incorporating complex systems thinking into these areas.

We agree that complex systems thinking is highly relevant to urban health and migration. However, given the format constraints of the Issue Paper with limited number of references, and no in-depth case studies, we have opted for a concise incorporation of systems-thinking principles rather than an extended literature review.

- In section 4 *Data and research: what evidence is needed to promote urban health equity?* several priority research areas are proposed. It would be helpful to outline any potential unintended consequences and how to mitigate these. For instance, in relation to the proposed research area of population mobility, there may be some unintended consequences of such population mobility tracking.

We appreciate this valuable suggestion. In the revised version of Section 4, we have addressed this point by explicitly acknowledging potential unintended consequences

associated with population mobility tracking—such as privacy concerns, data misuse, or erosion of trust among migrant populations. We have also included a short discussion of how these risks might be mitigated, for example through the use of ethical safeguards, clear consent procedures, data anonymization, and participatory approaches to data governance. We have aimed to do so concisely in keeping with the format constraints of the Issue Paper, while still foregrounding the importance of ethical data practices.

Competing Interests: No competing interests were disclosed.

Reviewer Report 31 December 2024

https://doi.org/10.5256/f1000research.173821.r345692

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The paper makes significant contributions to understanding the complex relationship between migration, urbanism, and health. These suggestions can enhance the depth and clarity of the analysis, ensuring that it effectively communicates its findings and implications to an interdisciplinary audience of researchers, policymakers, and practitioners in the field of urban health.

- Consider refining the abstract to include a brief mention of the methodological approach or specific case studies if any were used.
- The introduction could benefit from a more detailed discussion on how urban health challenges are uniquely modified by migration, possibly by providing a few global examples.
- Consider mentioning the scope of the paper early on, such as geographic focus, if applicable, or specific types of migration (e.g., rural-to-urban, international).
- Also be specific about the type of migration. International?
- The paper could be more impactful by incorporating case studies or examples that illustrate the key points. This would not only break down the theoretical content but also provide practical insights into how these challenges are managed in different

urban settings.
- Suggest a clearer outline of gaps in current research and how addressing these could inform better policy-making. This section would benefit from a critical analysis of the limitations in existing studies on migration and urban health.
- It would be useful to propose specific methodologies for future research, such as longitudinal studies or mixed-methods approaches, to address the complex dynamics of migration and health.
- The conclusion could be strengthened by explicitly linking back to the key messages introduced at the beginning and discussing how the findings support these messages.
- Propose in the conclusion a few strategic recommendations for policymakers, urban planners, and health professionals on integrating migration considerations into urban health strategies.
- Check for grammatical errors and syntax issues that could hinder the readability of the paper.

Is the topic of the review discussed comprehensively in the context of the current literature?
Yes

Are all factual statements correct and adequately supported by citations?
Partly

Is the review written in accessible language?
Yes

Are the conclusions drawn appropriate in the context of the current research literature?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Migration, urban studies, climate change

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however we have significant reservations, as outlined above.

Author Response 11 Jun 2025

Palmira Immordino

We sincerely thank the reviewers for their thoughtful and constructive feedback. We appreciate the recognition of the paper's contribution to advancing understanding of the complex relationship between migration, urbanism, and health. The suggestions provided were insightful and have helped us refine and strengthen the manuscript to better communicate its findings and implications to an interdisciplinary audience. Please find below, a point by point response. Reviewer comments are presented **in bold**, followed by

our responses in plain text. Where relevant, we indicate specific changes made to the manuscript and the sections in which they appear:

- **Consider refining the abstract to include a brief mention of the methodological approach or specific case studies if any were used.**

We have revised the Abstract to briefly reference the paper's conceptual and evidence-informed approach, noting that it draws from relevant literature and selected illustrative examples. This clarification helps to better align reader expectations with the nature of the paper and its methodological framing.

- **The introduction could benefit from a more detailed discussion on how urban health challenges are uniquely modified by migration, possibly by providing a few global examples.**

We have revised the Introduction to explicitly articulate how urban health challenges are shaped and intensified by migration dynamics. The new section highlights issues such as service delivery mismatches, infrastructure strain, and exclusion from formal systems—all of which interact with urban settings to compound health inequities. We hope this expanded framing strengthens the contextual foundation for the paper and better supports the arguments presented in the following sections.

- **Consider mentioning the scope of the paper early on, such as geographic focus, if applicable, or specific types of migration (e.g., rural-to-urban, international).**

Thank you for this useful observation. In response, we have revised the introduction to explicitly clarify the scope of the paper. The revised version now indicates that the paper focuses primarily on urban settings in low- and middle-income countries (LMICs) and considers both internal (e.g., rural-to-urban) and international migration. This clarification helps frame the discussion and provide readers with a clearer understanding of the paper's geographic and thematic orientation from the outset.

- **Also be specific about the type of migration. International?**

Thank you for pointing this out. As previously mentioned, we have revised the Introduction to clarify that the paper considers both international and internal migration, including rural-to-urban movement.

- **The paper could be more impactful by incorporating case studies or examples that illustrate the key points. This would not only break down the theoretical content but also provide practical insights into how these challenges are managed in different urban settings.**

We agree that case studies are valuable tools to illustrate and ground complex arguments. However, in line with the objectives and format of the Urban Health Issue Paper series, we intentionally did not include extended case examples in this version of the paper. As per the series guidelines, the primary aim is to strengthen advocacy for holistic, systems-informed approaches to urban health through succinct, generalizable insights rather than detailed empirical case studies. To maintain a concise and focused format that supports high-level advocacy and cross-sector engagement, examples are discussed conceptually but not

developed into full case narratives. We recognize the importance of applied evidence and would support the inclusion of complementary materials in the form of a dedicated case study series, as foreseen by the overall strategy of the initiative.

- **Suggest a clearer outline of gaps in current research and how addressing these could inform better policy-making. This section would benefit from a critical analysis of the limitations in existing studies on migration and urban health.**

We have now expanded the section titled "Data and research: what evidence is needed to promote urban health equity?" to include a more critical reflection on existing research limitations at the end of the section. Specifically, we highlight the dominance of descriptive and access-focused studies, the shortage of longitudinal and intersectional approaches, and the ethical complexities around data collection. We believe this addition strengthens the section by underscoring how closing these research gaps can lead to more effective and equitable urban health policy-making.

- **It would be useful to propose specific methodologies for future research, such as longitudinal studies or mixed-methods approaches, to address the complex dynamics of migration and health.**

We appreciate the reviewer's suggestion. We have addressed this point by expanding the section "Nature of approaches and types of data" to include specific and diverse research methodologies suited to the complexity of migration and health. In particular, we highlight the value of longitudinal designs, mixed-methods, participatory research, intersectional analysis, and systems-based approaches, which together offer robust tools to inform policy and practice.

- **The conclusion could be strengthened by explicitly linking back to the key messages introduced at the beginning and discussing how the findings support these messages.**

We have revised the conclusion to more explicitly reconnect with the key messages introduced at the beginning of the paper. These include highlighting the role of migrants in urban health systems, the need for holistic and systems-informed approaches, and the importance of robust, evidence-based policy responses to current and future migration-related health challenges. The revised conclusion now reinforces the central themes of the paper and ties together the major findings in relation to the initial framing.

- **Propose in the conclusion a few strategic recommendations for policymakers, urban planners, and health professionals on integrating migration considerations into urban health strategies.**

We appreciate the reviewer's suggestion to include specific strategic recommendations. In keeping with the issue paper's format — designed to support advocacy through high-level analysis rather than operational planning — we have retained a broad, systems-focused conclusion that reinforces key messages and promotes evidence-informed, migrant-inclusive policy approaches. Detailed programmatic or policy-specific recommendations are

outside the scope of the issue paper series but will be addressed in complementary materials and reports.

- **Check for grammatical errors and syntax issues that could hinder the readability of the paper.**

The entire manuscript has been carefully reviewed for grammar, syntax, and clarity. Edits were made where needed to improve flow, correct minor errors, and enhance overall readability, while maintaining consistency with the plain-language and action-oriented tone recommended in the issue paper guidelines.

Competing Interests: No competing interests were disclosed.