Policy and practice

Knowledge brokering for evidence-based urban health policy: a proposed framework

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ABSTRACT

This paper presents a multidimensional approach to examining the urban evidence–policy interface in low- and middle-income countries (LMICs), and applies this approach to a case study from Pakistan. Key features of urban health policy and the significance of the evidence–policy interface in rapidly changing LMICs are articulated; characteristics of evidence that has been successfully incorporated into health policy are also defined. An urban health evidence-to-policy exploratory framework for LMICs based on innovative multidisciplinary thinking and pivotal knowledge brokering is presented. Application of the framework to a case study on road transport and health in urban Pakistan underscores the opportunities and utility of knowledge brokering. Public health practitioners can become knowledge brokers at the evidence–policy interface to develop a concerted, coordinated and informed response to urban health challenges in LMICs.

Key words: urban health, health policy and practice, low- and middle-income countries, urban planning, knowledge broker

INTRODUCTION

In 2007, the world population constituted a majority of urban dwellers for the first time in human history.1 Growth in urban populations will take place primarily in the developing world and will add considerably to the already large numbers of slum dwellers in these settings, resulting in numerous health and social challenges.2 Estimates predict that by 2030, two thirds of the world’s population will reside in urban settings.3

The diverse and evolving definitions of the term “urban” complicate intercountry and temporal comparisons in the developing world.1 This paper uses the existing definition of “a concentration of people, buildings, or economic activities which a government chooses to call an urban centre”.4

Inherent to urban settings is a unique set of health effects and concerns. Three overarching and interconnected categories of proximal linkages between urban settings and health have been outlined: the physical environment, the social environment, and considerations related to health and social services.5 These three dimensions emphasize the complexity of urban settings–health linkages and highlight the multiple disciplines required for their analysis. Potential health impacts in each of the categories cover a wide range of conditions including infectious diseases, noncommunicable diseases, and injuries.6

Considering these varied challenges, this paper introduces an innovative and multidimensional approach to examining the urban health evidence–policy interface in low- and middle-income countries (LMICs). A successful interface is one that transforms health research findings into effective public policy and practice. The specific objectives are to articulate the significance of the evidence–policy interface in rapidly changing LMICs; propose an urban health evidence–policy framework for potential use in LMICs; and illustrate the framework using a case study on health and road transport in Pakistan.

Urban health in low- and middle-income countries

Sound urban health policy is critical in LMIC settings, especially with regard to the existing and increasing number of urban dwellers. The linkage of health policy with social policy, which focuses on equity considerations, should be a priority in these settings.7 Equity-focused urban health and social policy-making is essential in LMICs given the context of widespread poverty. However, this renders policy-making complicated due to the need to incorporate multiple sectors within the policy-making process.8 Further, the evidence base relevant to urban health policy is produced by a variety of disciplines such as sociology, urban planning and epidemiology, which results in differing perspectives on policy and planning priorities.9
Health can serve as a useful common denominator for an effective partnership between disparate players. Such an approach to policy-making is useful, particularly if the definition of health includes physical, mental and social well-being as espoused by the World Health Organization (WHO). Health may also provide an opportunity to extend this policy-making partnership to communities – potential links between health systems and urban communities have been clearly articulated with examples of success in LMICs.

In addition to the type of policy needed, it is important to consider the wide range of possible stakeholders in the policy process. For the purpose of this discussion, we will use material from the WHO-supported Healthy Cities projects, which focus on improving health outcomes in urban centres. The stakeholders considered in Health City programmes include government authorities, local and national politicians; international agencies; public and private service providers; nongovernmental organizations; community-based organizations; and policy networks. Service provision influenced by such urban-health oriented policies covers multiple areas such as health; transport; water and sanitation; education; housing; energy; environmental health; and community services.

The evidence–policy interface in low- and middle-income countries

Disciplines outside the health sector, such as policy and communication sciences, have taken the lead in exploring the linkages between evidence and decision-making. However, the nature of what constitutes evidence in LMICs needs first to be questioned and then defined. The limitations of a narrow science-focused approach to public health have recently been articulated, and it is increasingly recognized that there are different types of useful evidence.

For example, evidence is often used to refer to research, while research is only one type of evidence. Evidence can be defined as “information that affects the existing beliefs of important people about significant features of the problem you are studying and how it might be solved or mitigated”. Such a definition assumes particular significance in LMIC settings where substantial decision-making power may reside in key networks of important people. Following this line of thought, five types of evidence that inform the policy process are proposed:

(i) research evidence, including experimental trials;
(ii) knowledge and information evidence, such as findings from group consultations, documents and report analyses;
(iii) evidence on ideas and interests, which includes the opinions of individuals, groups and networks;
(iv) evidence relating to politics, e.g. on government agendas and political risk assessments; and
(v) economic evidence.

All of these can potentially influence policy; key pro-policy characteristics using this broader definition of evidence require thinking outside the confines of traditional research.

Beyond evidence, fundamental differences between professional cultures of scientists and policy-makers also exist in LMICs. These include differences in work goals; breadth of focus; consideration of facts and compromises; use of language; funding sources; and time frames for action. At the same time, there is growing recognition in both camps that strengthening evidence throughout the policy-making process is of importance in improving population health. Of equal importance is communication for effective public health practice at the evidence–policy interface.

Characteristics of evidence

Empirical studies on the key characteristics of evidence that facilitate incorporation into policy are limited in LMICs. However, five characteristics that fulfil this need are: evidence generated by researchers with whom policy-makers have personal contact; evidence that is considered a priority locally, nationally, or internationally; evidence generated in a timely manner, the findings of which are considered relevant; evidence presented in a comprehensible manner with clear findings; and evidence focused on reality (effectiveness, costs, and sustainability). Recognizing the importance of these elements is crucial for an effective evidence–policy interface in any setting.

Proposed urban health evidence–policy framework

The multiple facets of the urban health evidence–policy interface in LMICs are complex. A number of useful frameworks already exist and can be used to explore the evidence–policy interface in general. However, these are often grounded in a high-income country context and fail to account for the unique situation of urban LMIC settings. A more detailed and appropriate framework is therefore needed. The evidence–policy framework for urban health in LMICs we propose brings together all the considerations described above – types and characteristics of evidence; stakeholder engagement; and the dimensions of health and urban environment –into an interactive and systematic network of stakeholder influences that determine evidence-informed urban health policy.

The knowledge broker function

In order to implement this framework, we introduce the concept of knowledge brokers to act as translational scientists or intermediaries, effectively linking policy-makers with researchers. Knowledge brokering has been defined as “all the activity that links decision makers with researchers, facilitating their interaction so that they are able to better understand each other’s goals and professional cultures, influence each other’s work, forge new partnerships, and promote the use of research-based evidence in decision-making.”
Professional knowledge brokers that can navigate the evidence-policy interface and connect scientists and policymakers are a potential solution to the complexity of policy-making in urban LMIC settings. Such professionals would be better equipped than either policy-makers or scientists to facilitate bi-directional exchange between two apparently disparate groups. This approach has already been explored in Kenya, Uganda and the United Republic of Tanzania as a way to provide a more streamlined conduit of evidence than the fragmentary approach that characterizes many LMIC settings. It is therefore recommended that more research is needed in this area.

A key question immediately arises: who should be these knowledge brokers? One approach would be to adapt the role of a few public health practitioners, whose broad training and exposure to various fields make them well-situated to take on the role of knowledge brokering. Another potential option would be to train social scientists with backgrounds in sociology, anthropology, research and development with, ideally, some exposure to epidemiology, urban health, health promotion and economics. A cadre of such professionals with a sound grounding in evidence-based decision-making, information management and policy science, could be instrumental in assuring an effective interface between evidence and policy-making in various urban settings in LMICs. These knowledge brokers would potentially function within current institutional mechanisms; they could also become an integral part of a new strategy in settings where institutional mechanisms are either absent or weak.

Case study from urban Pakistan

Linkages between transport and health, especially in urban areas, are well known. They include the effects of noise pollution, excess particulate matter, climate change and injuries. A published case study on health and road transport in Pakistan focused on policy considerations and research gaps between health and transit. The systematic review found that the ill-health effects of transport were closely tied to a rapidly urbanizing society. For example, road traffic injuries became a leading cause of death among young men, lead toxicity was among the highest in Asia, and particulate matter from vehicle exhaust far exceeded international standards. Despite political awareness of these health issues, no formal road transportation policy or interventions were in place to combat them.

This study highlights the existing evidence-policy gap in Pakistan and provides an opportunity to apply the proposed urban evidence-policy framework. However, it is important to note that Pakistan is only one of many LMICs with a growing urban setting: Table 1 illustrates Pakistan’s similarities with Egypt, Gambia, Indonesia and Paraguay on fatality rates in urban areas.

Figure 2 highlights the proposed framework’s application to Pakistan. The three-dimensional approach to linkages between the urban environment and health allows structured thinking of these linkages in urban Pakistan. The first dimension – the physical environment – highlights the impact of transport such as road traffic injuries, air pollution, and noise pollution; less intuitive linkages such as the effect of road transport on

![Figure 1: An evidence-policy framework for urban health in low-middle-income countries](image-url)
Within the categories of evidence listed, we know that a body of both global and Pakistan-specific research exists on transport–health linkages.31,32 Knowledge and information are also available from national injury surveys and policy analyses.32 The Pakistan National Transport Research Center’s emphasis on transport alone, rather than a broader remit that includes health, mirrors the ideas and interests of many local experts. Finally, there is no evidence of political commitment to transport and health issues at the national level, although some economic evidence exists on financial losses associated with road traffic injuries.33

Applying the characteristics of evidence described above to health and road transport in Pakistan, it is apparent that linkages between evidence-generation and policy-making are weak. There appears to be limited contact between evidence-generators and policy-makers, who do not appear to consider evidence generation on road transport and health to be a priority. This may be due to inappropriate timing or practical focus of the evidence, or poor attention to effective interventions. Finally, the evidence that is available is largely in the form of reports and scientific literature, and no clear focus on communicating these findings in a comprehensible manner exists.

Analyses of existing policies and service provision in relation to road transport and health point to areas for consideration from a variety of perspectives. For example, an educational climate and, subsequently, on health also surface. The second dimension – the social environment – illustrates how the disease burden associated with road transport disproportionately affects people in low socioeconomic strata; further, the application of the social contagion theory shows the effects of vehicle-dependent transport norms in urban settings on health. The third dimension – health and social services – identifies how the availability and quality of health services, especially emergency medical services, affects the health outcomes of road transport in urban Pakistan.

Evidence characteristics
- Evidence generation is separate and parallel to policy-making
- Evidence generation not considered a priority
- No clear time frame for policy-making
- Evidence largely in reports or scientific literature
- Lack of intervention-focused evidence

Evidence categories
- Evidence base; Pakistan specific links between transport and health weak; some local data on road traffic injuries, air pollution, lead pollution, noise, physical inactivity and obesity
- Pakistan National Injury Survey; Pakistan policy document analysis
- National Transport Research Center emphasis on transport only
- Lack of adequate political commitment; wider political context unclear
- Economic loss from road traffic injuries and air pollution

Figure 2: Application of urban evidence-policy framework for low- and middle-income countries to Pakistan
dimension will highlight whether or not road safety is incorporated into school curricula in Pakistan, while a civic dimension may indicate whether community mobilization has occurred.

In the context of road transport and health in urban Pakistan, the absence of a knowledge broker function is apparent. Whatever information and knowledge exists on the subject—and there appears to be a moderate amount—does not seem to flow to and from the individuals, networks, and institutions that need it to establish an effective evidence-to-policy system.

### CONCLUSION

The purpose of our proposed framework is to enable a systematic analysis of the complex multidimensional context within which the evidence-policy interface exists in urban settings in LMICs. Furthermore, the framework postulates the centrality of the knowledge broker function in the translation of evidence to policy. The possible utility of such an approach is demonstrated when considering the transport-health challenges in urban Pakistan, which are similar to those seen in many LMICs. Advocating the use of such brokers to national governments is therefore considered worthwhile; international donors that are committed to evidence-based practice may also consider facilitating this form of capacity-building in low- and middle-income countries.

### REFERENCES

15. Fielding JE, Briss PA. Promoting evidence-based public health policy: can we have better evidence and more action? Health Aff (Millwood). 2006;25(4):969-78.


