IJHPM
International Journal of Health Policy and Management

Editorial

Needed: Global Collaboration for Comparative Research on Cities and Health

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Abstract
Over half of the world's population lives in cities and United Nations (UN) demographers project an increase of 2.5 billion more urban dwellers by 2050. Yet there is too little systematic comparative research on the practice of urban health policy and management (HPAM), particularly in the megacities of middle-income and developing nations. We make a case for creating a global database on cities, population health and healthcare systems. The expenses involved in data collection would be difficult to justify without some review of previous work, some agreement on indicators worth measuring, conceptual and methodological considerations to guide the construction of the global database, and a set of research questions and hypotheses to test. We, therefore, address these issues in a manner that we hope will stimulate further discussion and collaboration.
Keywords: Urban Health, Global Cities, Comparative Research, Cities and Health
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Citation: Gusmano MK, Rodwin VG. Needed: global collaboration for comparative research on cities and health. *Int J Health Policy Manag.* 2016;5(x):x–x. doi:10.15171/ijhpm.2016.39

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Introduction

Over half of the world's population lives in cities and United Nations (UN) demographers project an increase of 2.5 billion more urban dwellers by 2050.[1] Over 90% of this growing population will live in low- and middle-income countries (LMICs) which suggests that global health status will increasingly depend on our capacity to improve the health of these urban populations.[2] Despite these well-known facts, there is too little systematic comparative research on the relative success and failure of urban health policy and management (HPAM), particularly in the megacities of middle-income and developing nations.

There are many reasons for this state of affairs. Most international data collected on population health status and healthcare system characteristics are presented not at the city level, but for nation-states since they are the organizers of our most powerful global institutions. In addition, international borders are controlled by nation-states so it makes sense to think about communicable disease control across political units responsible for protecting their populations. Finally, and following from these first two reasons, most comparative studies of healthcare systems focus on national aggregates. This is true for wealthy nations belonging to Organisation for Economic Co-operation and Development (OECD), and for most other members of the UN and its affiliated organizations, eg, World Health Organization (WHO), United Nations Development Programme (UNDP), United Nations Children's Emergency Fund (UNICEF), World Bank or International Monetary Fund (IMF). Although comparative research on national healthcare systems has spawned a vast literature that describes, and seeks to understand and learn from health systems,[3] there are nevertheless severe limitations to this focus.[4]

First, there are enormous variations in population health and health system performance within nations, between urban and rural areas, between economically depressed and prosperous cities, big cities and smaller ones and neighborhoods within them. Second, it is exceedingly difficult to disentangle the relative importance of healthcare systems from economic, socio-cultural and other determinants of population health, including the neighborhood context in which people live. It is even more difficult to do so at a level of aggregation such as the nation-state. Third, despite the rise of the welfare state, even in the most centralized nations, many dimensions of health and social policy elude national and state levels. Some of the most challenging problems – care for vulnerable older persons, people with severe mental illness, the most economically disadvantaged and the uninsured fall into a residual category of problems that are passed down to subnational, metropolitan and local governments, among which city authorities bear a disproportionate share.[5,6]

There is yet another important reason why cities are important places to study healthcare systems and the practice of HPAM. At the end of the day, city governments must pick up the garbage, provide transportation, wrestle with inequality, manage pollution and provide healthcare for the most vulnerable. As Barber observed[7]: "Cities have little choice: to survive and flourish, they must remain hospitable to pragmatism and problem solving, to cooperation and networking, to creativity and innovation." Among those who believe that nation-states are increasingly difficult to govern while cities are often able to "get things done," global megacities represent a new frontier for effective policy-making and implementation.

For all these reasons, there is a good case for studying health systems among cities and comparing their relative performance, as well as the role of HPAM in improving healthcare systems and population health. In the field of urban planning, this will require a renewed focus on the location of health infrastructure and services that improve population

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health. In public health and the field of HPAM, it will require special attention to healthcare systems and population health in cities, which in turn, will require disaggregated data on health services and health at the city and neighborhood levels.

Rationale for a Global Database on Cities and Health

Imagine if we could create – for cities around the world – the equivalent of OECD's extensive health database for wealthy nations.[8] Such a project might begin with the establishment of an international organization whose mission would be to collect and disseminate data on population health, public health programs and healthcare services, among a worldwide network of cities. This global database would extend previous research beyond the dominant literature on "inner cities" and health in the United States. The rationale for such an effort is quite simply to promote comparative research on the performance of healthcare systems and other interventions to improve population health within and across cities.

We have previously suggested a preliminary framework, made the case to compare population health and health services among world cities in wealthy nations,[4] and highlighted the presence of cities, more generally, in health services research.[9]

We understand that it remains easier to expand the field of urban health research by using the city as a sampling frame for the study of subpopulation groups who happen to be well-represented in cities, or for studies of disparities among neighborhoods and of specific health conditions that plague vulnerable populations, eg, those with drug resistant tuberculosis (TB), drug addiction and HIV/AIDS. For such research, the *Journal of Urban Health* provides a precious inventory of articles.[10]

We recognize that there have been notable efforts toward the construction of the kind of database we envisage. The National Coalition of County and City Health Officials in the United States, publishes a data platform on population health indicators among 26 big cities, but there are no accompanying indicators on health services and the healthcare systems.[11] Project Mégapoles organized a network of 15 capital cities in Europe and produced a number of impressive reports, but it has been inert since 2000.[12] Here, we call for global collaboration to construct a database on population health and the healthcare systems among the largest cities of the world – in wealthy nations, as well as in LMICs.

We do not assume that the creation of a database, along with simple comparisons, will necessarily yield useful research. The expenses involved in data collection would be difficult to justify without a thorough review of previous work, conceptual and methodological considerations to guide the construction of the database, agreement on indicators worth measuring, and a set of general questions and hypotheses to test. We, therefore, conclude with a brief overview of these issues, which we hope will stimulate further discussion.

Conceptual and Methodological Issues

In thinking about cities and the creation of a global database on urban health, researchers, as well as practitioners in the field of HPAM, ought to address at least two conceptual and methodological issues. First, a task in any comparative inquiry is to define relevant units of analysis. Second, related to the first, is the need to structure comparative analyses around similarities, as well as differences, among these units, so as to encourage the possibility of quasi-experimental designs and the generation of hypotheses on the impact of differences in public health infrastructure and health services financing and organization, across cities that share a number of common attributes.

With respect to the first issue, although there is a rich literature in urban planning on the classification of cities, most existing comparisons of health and healthcare in cities have not paid sufficient attention to this problem. Vlahov and Galea recognize its importance by highlighting what they call "urbanization" and "urbanicity" as two dimensions of their proposed urban health framework.[13] By urbanization, they refer to the broader forces affecting the nature of cities over time. If one were to measure the concept at one point in time and rely on some basic indicators for characterizing different cities, some important ones to consider would be: population size, density, and income per capita. Such indicators allow one to distinguish between major categories of cities: eg, mid-size or smaller cities, megacities defined by the UN as urban agglomerations with a population exceeding 10 million people, or global cities or "city-regions."[14]

Even with such crude distinctions, however, acceptance of city "categories," rarely addresses the problem of how to define relevant spatial boundaries among cities and neighborhoods within them. To take a single example, even for a city as well-defined as New York, in popular imagination, UN demographic and housing studies define it as the tri-state area including parts of New Jersey, Connecticut, and Westchester County – even more broadly than the US Census definition of the consolidated metropolitan area (21.2 million), let alone the 8 million that make up the legal entity New York City, NY, USA.

With respect to the second issue, structuring comparative analyses around similarities, as well as differences among cities, even after selecting comparable cities and agreeing on criteria to define appropriate units of analysis, it is also important to reflect on criteria for defining intra-city comparisons. Once again, Vlahov and Galea's focus on three dimensions of cities – social environment, physical environment and health and social services – is a useful starting point.[9] A focus on these dimensions would quickly lead to others. For example, one ought to include some indicators on the economic base of cities, their housing, transportation, socio-demographic and health and social services system characteristics. To improve our understanding of urban healthcare systems, it is important to select some indicators of health system characteristics, eg, levels of healthcare resources, the relative importance of hospitals and academic medical centers, the mix of public and private hospitals, the specialty mix and density of healthcare professionals and the strength of the social safety net.

In summary, an initial framework to compare cities, health services and health would begin by addressing the conceptual and methodological issues we have raised and distinguishing city categories and spatial units of analysis. Next, it would classify them according to a variety of urban/neighborhood and health system characteristics, and explore the impact of cities – their neighborhood, transport and health system characteristics – on the use of health services and population health status. Finally, no comparison of cities and urban

HPAM should exclude an effort to assess their relative performance based on a range of established indicators.[15]

Research Questions, Hypotheses, and Concluding Remarks

To what extent do cities promote or undermine population health? What city characteristics affect the organization of their public health infrastructure and healthcare organization, as well as their financing? Conversely, what are the effects of hospitals, academic medical centers, medical research and training activities, and more generally patterns of access to primary care services, on the local economy of the city, as well as its population health? How do national and subnational-level patterns of healthcare financing and organization affect city-level interventions in the health sector? Also, how do spatial inequalities in the supply of health services, across city neighborhoods, affect a city's healthcare system and its population's health?

With respect to our initial question, one hypothesis is that, because cities are engines of economic growth, opportunity and innovation, they are better able to promote population health by focusing on social determinants, public health infrastructure and provision of critical healthcare resources than suburban or rural areas.[16] Let us call this the urban advantage hypothesis. An alternative hypothesis is that the convergence of high population density with the risks of infectious disease, bio-terrorism and inadequate public health infrastructure result in severe urban penalties.[17] Add to these risks the growth of urban populations living in slums, the increase of intra-urban income and spatial inequalities, and one may find further evidence to support this urban penalty hypothesis.

There is a vast literature on urban health in developing countries.[18] The UCL *Lancet* Commission reviewed strategic interventions to "create and maintain the so-called urban advantage."[19] What strikes us as missing in this literature, however, are comparative analyses of the extent to which specific cities have succeeded in producing health improvements and how they have done so. Among wealthy world cities, we have compared the health systems in New York, Paris, London, Hong Kong.[20,21] Their experience, however, is less relevant to rapidly growing cities in developing nations. That is why we believe the time is ripe for global collaboration to promote comparative research on cities and health – not only among wealthy cities that invest more resources in data collection, but especially in LMICs.

The development of a global database and research program on cities and health should aim to improve policy on the experience of cities, worldwide, in designing interventions to improve their population's health as well as access to health services. We hope that such a program would promote a systematic examination of comparative experience about cities and health – not simply to identify best practices, but equally important, to document interesting failures.

Ethical issues
Not applicable.

Competing interests
Authors declare that they have no competing interests.

Authors' contributions
Both authors contributed equally to the writing of this paper.

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