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Health in Hong Kong: an international urban perspective

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Cities, population health and health care systems

Hong Kong stands out among wealthy megacities as having some of the best indicators of population health. Infant mortality is 3.0 per 1,000 births in Hong Kong compared to 6.2 in New York City and 4.0 in Paris, while life expectancy at birth is 78.0 years compared to 77.7 years in Tokyo and 76.1 years in Greater London (Table 1). Such indicators are too broad, however, to draw useful inferences about the performance of Hong Kong's health care system, let alone the effects of Hong Kong, as a city, on its population's health. It is difficult to disentangle the relative importance of health systems and diverse city characteristics, such as population density, levels of environmental pollution or the nature of the built environment, from the multiple determinants of health, including the sociocultural factors and the neighbourhood context of the population whose health is measured.

Health is a bit like the sky. It covers everything – longevity, freedom from disease, quality of life, well-being – yet it touches nothing and is therefore hard to grasp. Different measures of population health are influenced by genetic and environmental factors and by what the World Health Organization (WHO) calls 'the social determinants of health', which range from income, educational levels, housing conditions and nutrition to social relationships, health promotion and health care services like disease prevention (vaccinations and screening). Campaigns like the WHO's Healthy Cities highlight the importance of intersectoral strategies to health promotion. Not surprisingly, such strategies involve long lists of recommended interventions without much guidance as to the relative importance of each one.

Because of these complexities, the field of urban health is dominated by studies of sub-populations within cities – migrants, ethnic minorities, IV drug-injecting populations and those suffering from HIV/AIDS or drug-resistant tuberculosis. There has been less attention to comparing health care systems among cities, and evaluating the extent to which such systems and city characteristics affect various measures of population health. An alternative approach is to describe a range of health systems among cities that share a host of key characteristics to assess their performance and to speculate about the challenges they share and the extent to which, to quote Paul Valéry, they may 'enrich themselves with their mutual differences'.

Here I focus on Hong Kong's health system and the public health challenges faced by all megacities, as well as those specific to Hong Kong. In addition, I highlight some lessons from the experience of how three cities – New York, Greater London and Paris – have developed convergent strategies to protect their population's health and provide their residents with access to health care services. I conclude with some questions for urban planners concerned with cities and health.

Hong Kong's health system

Health status measures are crude indicators of health system performance or a city's impact on population health. There are, however, two other indicators which stand out as valid measures of a health system's performance with respect to assuring access to medical care known to have an impact on health: avoidable mortality (AM) and access to primary care. AM measures deaths before the age of 75 due to diseases for which there are effective health care interventions: disease prevention services, primary care and specialty services. Access to primary care is often evaluated by measuring the magnitude of hospitalisations for so-called 'avoidable hospital conditions' (AHC). The assumption is that if patients receive appropriate and timely health care before their conditions flare up, they can avoid painful and expensive inpatient hospital care. On the basis of these indicators, research I have conducted with Chau, Woo, Chan, Welsz and

Gusmano suggests that Hong Kong's health care system is not as good as most people suppose based on indicators of its strong population health status.

Judged on the basis of AM, Hong Kong has the second lowest rate in comparison to Manhattan, Paris and Inner London. Although this is impressive, it is misleading when interpreted in light of its residents' relatively good health status (Table 1). As a proportion of all deaths, however, Hong Kong has the highest proportion of AM. This suggests that health system improvements could save lives. We found that Hong Kong also has the second lowest rate of hospital admissions for AHC, at least with respect to people aged 65 and over. Once again, when interpreted in light of the population's relatively good health status, this suggests that measures can still be taken to improve Hong Kong's health system, particularly with respect to the many residents who delay visits for primary care and are admitted to overcrowded hospitals after exacerbations of conditions that should have been managed by primary care physicians.

These findings may come as a surprise for those who would immediately jump to the conclusion that high levels of population health reflect an excellent health care system and a healthy city. However, they are not surprising given that Hong Kong's health care system provides free service in public hospitals yet relies on practitioners in private fee-for-service practice for the provision of primary care. Since only around 30 per cent of the population have employer-based insurance, most of the population has to pay out-of-pocket for primary care by physicians in private practices or rely entirely on the public hospital system and its affiliated outpatient clinics where physician-patient encounters are notoriously brief and available primary care is considered inadequate to meet the population's needs.

Public health challenges

Beyond such health system problems, like other world cities, Hong Kong faces similar convergent public health challenges. First, the return of infectious diseases and the emergence of new ones, such as AIDS, SARS and the avian flu virus (H5N1). Second, the risk of terrorism, including bioterrorism, and emergencies stemming from climate change, such as heat waves or flooding. Third, the challenge of overcoming barriers in access to health services for recent migrants, the poor and/or ethnic minorities. Fourth, megacities worldwide face rising inequalities among social groups and city neighbourhoods, which are reflected in the simultaneous growth of homelessness, poverty and wealth. Finally, cities must face the health consequences of environmental pollution, which are exacerbated in Hong Kong by its topography, roadside emissions of respirable particulates, and proximity to mainland China's Pearl River Delta (PRD) region.

Hong Kong faces a unique long-term challenge due to PRD's rapid growh. With its population of more than 47 million, PRD's GDP grew at an annual rate of 21.2 per cent between 1978 and 2007, more than twice the national average. For the period 2008 to 2020, the State Council's plan for PRD focuses on massive physical infrastructure projects to improve integration among its nine cities, thereby creating the largest megacity-region in the world. This likely comes at the expense of public health initiatives and health care resources, contributing to the PRD's staggering public health problems and severe barriers in access to health care including:

1) Unprecedented levels of environmental pollution, which are known to increase hospital admissions for asthma and cardio-respiratory disease as well as mortality from these conditions;
2) A massive influx (20 million) of migrants, many with associated social problems;
3) Industrial accidents resulting from dangerous working conditions;
4) A high incidence of infectious diseases (including AIDS, drug-resistant tuberculosis and malaria), rising chronic disease, a high prevalence of mental problems and maternal and children's health issues; and
5) Flagrant inequalities in income which have exacerbated barriers of access to health care. Although access is supposed to change as the new national health insurance legislation is implemented, it looms as an enormous challenge for local experts who have already attributed the labour shortages of 2004 and 2007 to inadequate social insurance cover.

Hong Kong smog levels are already affected by the environmental pollution from PRD. In developing strategies to maintain population health, planners will have to confront the challenges posed by PRD's rapid growth. In some respects, they may draw useful lessons from the successes and failures of other world cities in wealthy nations.

Lessons from other megacities

Experience from other megacities in wealthy nations, notably New York, London, Paris and Tokyo, is important because they have survived devastating disease epidemics in the past and have established a strong public health infrastructure. All four cities are characterised by significant disparities in income, educational attainment, unemployment rates, housing and environmental conditions among their neighbourhoods. These social determinants of health must be addressed in order to improve population health. In addition, they have important implications for how to target health protection and promotion programmes, and for how to improve emergency preparedness and communication with diverse urban populations. In New York, London and Paris public health leaders have targeted programmes for their poorest residents and for immigrant populations from around the world.

New York stands out, though, because it has the largest share of its population not covered under a national system that eliminates financial barriers to health care access. And yet it has one of the most sophisticated disease surveillance systems. Still, there is one convergent trend in public health from which Hong Kong could learn with respect to the experience of New York, Paris and London. Among those cities with the greatest social inequalities, public health leaders have recognised that the city neighbourhood is a critical spatial unit for interventions targeted to those populations at highest risk of disease. New York's Department of Health and Mental Hygiene has located three satellite offices in the highest-risk areas of the city – Central Harlem, East Brooklyn and the South Bronx. In Paris, the centrally managed politique de ville (policy for cities) has programmed infrastructure investments in those neighbourhoods with the highest rate of unemployment. In London, much attention has been placed, at least at the rhetorical level, on strategies to promote neighbourhood regeneration. Since cities are characterised by spatial inequalities in population and neighbourhood characteristics, this approach is not surprising. What is more, it highlights the potential of cities in the protection and promotion of population health.

Cities and health

There is widespread belief that the health of urban populations is not as good as that of the population as a whole. This 'urban health penalty' hypothesis is supported by a substantial body of work that documents higher rates of infectious diseases in cities than in their respective nations. Some studies have also found similar patterns for non-communicable diseases like heart disease and cancer.

Those who challenge the urban penalty hypothesis point to contradictory evidence. They typically celebrate the city's vitality and capacity for innovation. For example, Metropolitan New York's economic output is greater than that of 45 of the 50 US states. Likewise, PRD accounts for 10 per cent of China's GDP despite containing only 3.6 per cent of its population. There is also a growing body of evidence in support of the hypothesis that urban health compares favourably to that of the nation as a whole. For example, life expectancy at birth is higher in New York, Paris and Hong Kong than the national average. In addition, among older people in the world cities we have studied, there appears to be an urban advantage in terms of longevity.

With respect to population health, the challenge for megacities is whether they can evolve from breeding grounds for the rapid transmission of disease to critical spatial entities for the protection and promotion of population health. We know that certain forms of suburban development that require car ownership and attract commuter populations also serve to limit exercise, facilitate obesity and even allow for a higher incidence of road rage. We know that populations in poor urban communities are disproportionately exposed to environmental toxins and that high population density can be a dangerous incubator for the spread of infectious disease. We also know that effective disease surveillance and access to health and social services can reduce the incidence and progression of disease leading to painful and expensive hospitalisations. But is this enough knowledge to address neighbourhood inequalities in health? How can it help us to design interventions in neighbourhoods with those populations that are at the highest risk?

In our book, Health Care in World Cities: New York, Paris, London, Gusmano, Weisz and I argue that we should not overestimate the capacity of welfare states to serve those urban populations that fall through the cracks of national health and social entitlement programmes. Nor should we underestimate the ability of city governments to address social issues, including the health of their residents. Such efforts include New York's expansion of farmers' markets in poorer neighbourhoods, London's promotion

of neighbourhood regeneration and Paris' systematic attention to locating local social service offices and maternal and child programmes in areas of higher risk. The extent to which such interventions succeed in meeting population health objectives is difficult to evaluate for a host of methodological and political reasons. Much anecdotal evidence suggests that the proliferation of neighbourhood-level interventions matters. More importantly, the convergence of efforts across cities to target neighbourhoods with populations considered at highest risk for social exclusion and disease the time is ripe for city planners and public health experts to collaborate in the design and evaluation of neighbourhood-level interventions to protect and promote population health.

	Infant mortality (deaths before age 1 per 1,000 live births)	**Life expectancy at birth**: males (years)	**Life expectancy at birth:** females (years)	**Life expectancy at 65**: males (years)	**Life expectancy at 65:** females (years)	**Avoidable Mortality** (per 100 population aged 1–74 years)*
New York	6.2	74.5 (2000)	80.2 (2000)	17.0 (2000)	20.1 (2000)	0.80 (1999–2003)
Greater London	5.4	76.1 (2000–2004)	80.9 (2000–2004)	15.6 (1997–1999)	19.2 (1997–1999)	0.93 (1999–2003)
Paris and First Ring**	4.0[1]	77.6[3] (2002)	83.1[3] (2002)	17.7 (1999)	21.7 (1999)	NA
Tokyo (23 wards)	2.8 (2001–2004)	77.7 (2000)	NA	17.7 (2000)	22.2 (2000)	NA
Hong Kong	3.0 (2000)	78.0 (2000)	83.9 (2000)	17.35	21.53	0.75 (1999–2003)

Table 1. Health Status Indicators in New York, London, Paris, Tokyo and Hong Kong, (2000–2004).

* For New York and Greater London, these rates were calculated only for the urban core (Manhattan and the 15 boroughs known as Inner London). They are age-adjusted based on the US 2000 standard population.

** Includes three départements surrounding Paris, *intra-muros:* Haute-de-Seine, Val de Marne and Seine-Saint Denis.

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