

# CITIES HEALTH AND WELL-BEING

## URBAN AGE HONG KONG

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## CONFERENCE COMPENDIUM

### FRAMING PAPERS

**ADDRESSING THE SOCIAL AND -ENVIRONMENTAL DETERMINANTS OF URBAN HEALTH EQUITY** 2  
Sharon Friel

**MOVIN' ON UP: HAPPINESS AND URBAN ECONOMICS** 3  
Paul Dolan and Robert Metcalfe

**WHY COMPLEXITY IMPROVES THE QUALITY OF CITY LIFE** 4  
Richard Sennett

**URBAN STRESS AND MENTAL HEALTH** 4  
Mazda Adli

**HEALTHY PEOPLE IN MODERN CITIES** 5  
Detlev Ganten

**THE IMPORTANCE OF THE BUILT ENVIRONMENT TO CHILDREN'S WELL-BEING: WHAT DO WE KNOW?** 6  
Elizabeth Burton

**HEALTH FOR THE URBAN POOR** 7  
Ernestina Coast and Ama de Graft-Aikins

**UPGRADING DENSE INFORMAL SETTLEMENTS** 8  
David Satterthwaite

### LEARNING FROM

**HONG KONG'S HOUSING SHAME** 10  
Society for Community Organization

**THE CHALLENGES OF BEING OPEN: DENSITY, HEALTH AND WELL-BEING IN SINGAPORE** 11  
Kee Seng Chia, Chye Kiang Heng and Kong Chong Ho

**BUILDING HEALTHY CITIES: THE EXPERIENCE AND CHALLENGES FACED BY CHINA** 12  
Bingqin Li

**HIGH URBAN DENSITY AND THE GOAL OF A HEALTHY CITY: THE CASE OF CHONGQING** 13  
Tianqi Huang, Ling Huang and Jianfeng Xu

**URBANISATION AND DISEASE PATTERNS IN SHANGHAI** 13  
Youde Gou

**SPATIAL ACCESS TO HEALTH SERVICES IN SHANGHAI** 14  
Yuan Ren

**URBAN RISK AND WELL-BEING IN TOKYO** 15  
Takayuki Kubo

**RETHINKING AFRICAN URBANISM FROM THE SLUM** 15  
Edgar Pieterse

**HEALTHY CITIES CITYLAB: UNDERSTANDING URBAN HEALTH IN THE GLOBAL SOUTH** 17  
Warren Smit and Vanessa Watson

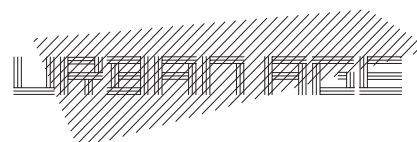
**URBAN DEVELOPMENT IN MAPUTO: STRATEGIC ACTION PLANNING ON A TIGHT BUDGET** 18  
Jørgen Eskemose Andersen and Paul Jenkins

**DESIGNING DENSITY IN KARACHI: ALTERNATIVES TO APARTMENT BLOCKS** 19  
Arif Hasan

**PRIMARY HEALTH CARE: THE HEALTH CARE SYSTEM REFORM IN RIO DE JANEIRO** 20  
Hans Dohman

**NEIGHBOURHOOD-BASED APPROACHES IN VANCOUVER** 21  
Nathan Edelson

**HEALTH AND WELL-BEING IN EAST LONDON** 22  
Stephen O'Brien



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# FRAMING PAPERS

## ADDRESSING THE SOCIAL AND ENVIRONMENTAL DETERMINANTS OF URBAN HEALTH EQUITY

Sharon Friel

### THE SOCIAL DISTRIBUTION OF HEALTH IN AN URBANISED WORLD

The global movement towards urban living has brought a number of social, economic and health benefits. Urbanisation has benefited many local economies and businesses, with urban areas being economically more prosperous than their rural counterparts due to economies of scale, pooling of talent and skills and availability of multiple services and technologies. Conditions of housing and sanitation in cities have improved markedly, as has average household income, levels of education and broader opportunities for women to participate in the labour force. Throughout the twentieth and twenty-first centuries, there have been significant improvements in indicators of health and life expectancy among urban populations.

Why then a concern about urban health inequities? In all countries, rich and poor, there is an unequal social distribution of health both within countries (the urban-rural divide) and within cities (the social gradient). Even though health is, on average, better in urban than in rural areas, this masks urban disadvantage, where health can be as bad as or worse than in rural areas. A 2007 analysis of child health outcomes in 47 developing countries found that the risk of stunting and mortality was on average 1.4 times higher in urban than rural areas while, in nine of the 47 countries, urban children from lower socioeconomic households had higher rates of mortality. In sub-Saharan African cities, children living in informal settlements are more likely to die from entirely preventable respiratory and waterborne illnesses than those living in rural areas. In Kenya, for example, not only are there marked inequities in under-five mortality rates within the city of Nairobi, but the rate is far worse in Nairobi's slums and informal settlements than in Kenya as a whole and its rural areas.

Urbanisation itself is reshaping population health problems, particularly among the urban poor, towards non-communicable diseases and injuries. As the degree of urbanisation and national income increases, so too does the prevalence of diabetes, heart disease, obesity, mental health problems, alcohol

and drug abuse and violence. In low- and middle-income countries the prevalence of hypertension is increasing, with rates being higher in urban than in rural settings. Obesity has become increasingly more prevalent among socially disadvantaged groups and often sits cheek by jowl with underweight among poor populations in many cities throughout the world.

Within poor countries, poor people suffer a higher burden of morbidity and mortality from traffic injuries. In rich countries, children from poor socioeconomic classes suffer more injuries and deaths from road crashes than their counterparts from high-income groups. Crime and violence are more pronounced in urban areas, especially in slums, than in rural settings. Homicide rates are high and still growing in some cities, and robbery poses a major problem in many urban centres, not least because it contributes to general feelings of fear and insecurity.

### THE SOCIAL AND ENVIRONMENTAL DETERMINANTS OF URBAN HEALTH INEQUITIES

The Global Research Network on Urban Health Equity (GRNUHE) followed a 'social determinants' approach to health, exemplified by the World Health Organization's Commission on Social Determinants of Health, headed by Professor Sir Michael Marmot. This approach notes that health is a result not only of biology but also of the interconnected material, psychosocial and political conditions in which people are born, grow, live, work and age. Following a social determinants approach has implications for the policies and programmes aimed to reduce these inequities. Under this approach, urban health equity depends vitally on pursuing processes of political empowerment so that individuals and groups can better represent their needs and interests, and, in so doing, can challenge and change the unfair distribution of material and psychosocial resources.

In urban terms, the social determinants approach suggests that improving living conditions in such areas as income, housing, transport, employment, education, social support and health services is central to improving the health of urban populations. In reality, however, the restructuring of cities by the global marketplace, while conferring benefit for some, has led to rapid and often unplanned urbanisation, outpacing the ability of governments to build essential infrastructure and services and provide basic needs for living. While urban areas pose a major opportunity to improve health equity, to date current urban restructuring has contributed to a growing gap between the living conditions of rich and poor in cities.

While city populations have

tended to become wealthier than their rural counterparts, they have become increasingly unequal. For the majority of developing countries in Africa, Asia and Latin America, inequalities in urban areas generally exceed the inequalities in rural areas. These relative inequalities in social matters affect the social distribution of health outcomes. Work by Richard Wilkinson and Kate Pickett, *The Spirit Level: Why Equality is Better for Everyone* (2009), although based on data from high-income countries and not at the city level, demonstrates a marked correlation between income inequality and health inequities within nations.

In addition to the social causes of urban health inequities is global environmental change. There is now widespread recognition that the disruption and depletion of natural environmental systems, including climate change, has profound implications for the health of people globally. These environmental disruptions encompass climate and atmospheric change, pollution and ecotoxicity, depletion of resources and loss of habitats, species and biodiversity. The combination of these changes is already affecting the health of the population in some parts of the world and, as these trends continue, the number of people affected will grow.

### A 'SOCIAL AND ENVIRONMENTAL DETERMINANTS' MODEL OF URBAN HEALTH EQUITY

During 2009 and 2010, GRNUHE, which was financially supported by the Rockefeller Foundation, reviewed the evidence on what could be done to address the social determinants of material, psychosocial and political empowerment of urban populations, especially in low- and middle-income countries, and thereby improve health of the urban poor and the socioeconomic gradient in urban health. They developed a model that focused on the interplay between the urban physical form, its social conditions and infrastructure, the added pressure of climate change and the role of governance to determine maximum and equitable health benefits from urbanisation.

They found that there is a reciprocal relationship between urban social conditions and the built environment. For example, poorly planned cities and suburbs coupled with inefficient public transit and road systems result in long and expensive commutes for low-income workers. Long commutes can fray family and community ties, reduce the opportunity for social gatherings or leisure and recreation, create conditions that make crime and violence (and the fear that accompanies them) more likely, or reduce access to basic amenities and services. They also note that urban planning can either contribute to or help mitigate climate change, depending upon how energy-efficient and carbon-intensive the city's built form and transportation systems are. The nature of the physical environment can also make it easier or more difficult for people and communities to adapt to climate change. Similarly, the effects of climate change and other

forms of environmental degradation can exacerbate health inequities that are rooted in social and economic conditions, because people who are more socially disadvantaged are more likely to live in hazardous areas and have less access to adaptive technologies such as air conditioning, for example.

When these aspects of urban life – the natural and built environments and social and economic conditions – are well integrated, the product is both improved health and greater health equity, and, even more broadly, higher and more equitable levels of human development. This is to the benefit of urban citizens, their communities, local businesses and large employers, the city and indeed the nation as a whole.

This is a simple message, but one not yet established in cities around the world. A social and environmental determinants approach implies that much of the policy and practice that affects urban health equity lies outside the health sector. In addition to health ministers, national and city ministers for planning, housing, transportation and the environment have a crucial role to play. Effectively communicating the potential for all sectors to impact on urban health and health equity is crucial in order to incorporate health impacts into urban governance.

All three of the interacting aspects of urban life in the centre of our model are, in turn, nested within the broader concept of urban governance. 'Good' – or, in our case, 'healthy' – urban governance is concerned with the equitable distribution of power and resources, and with ensuring an appropriate balance among the competing demands of the various stakeholders in the city for the health of all. This requires a form of governance that engages and empowers the citizenry, especially the most disadvantaged and least powerful people and communities. As environmental sustainability is becoming embedded in national and city governance, so too must health, if we are to reduce urban health inequity. That urban health inequities and inequities in social and environmental determinants exist and appear to be widening, particularly in cities in low- and middle-income countries, suggests that much remains to be done to secure greater health benefits from the opportunities of urbanisation around the world.

### ACKNOWLEDGEMENTS

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## MOVIN' ON UP: HAPPINESS AND URBAN ECONOMICS

Paul Dolan and Robert Metcalfe

Imagine thinking about where to live. Imagine thinking about any decision really. That decision will be based on forecasts of your well-being and the well-being of those that you care about. Well-being comes in many guises and will be affected by a range of factors, such as how rich and healthy you are. Sometimes income and health are used as measures of well-being in their own right. To us, well-being is best represented in subjective terms: in essence, by reports of happiness. We use the term 'happiness' very broadly not only to capture good moods but also to give a sense that life is going well.

There is now an accumulation of evidence to suggest that we are often not very good at making choices that make us happier. We are often guilty of 'miswanting': of not wanting most of the things we will enjoy best. This has important implications for how we think about many things, including urban density and policy.

Take the decision about how far to live from work. Most of us will think about the trade-off between a longer commute and a bigger house in a less expensive area. The trouble is, we seem to make the wrong trade-offs, at least so far as happiness is concerned. For example, activity-based reports of happiness in the US and in Germany have shown commuting to be one of the least pleasurable activities during the day. Longitudinal data in Germany have been used to show that commuting over two hours a day negatively impacts on life satisfaction, and control factors such as income and housing quality. Interestingly, similar data from the UK suggest that women are more likely to be negatively impacted by commuting than men.

Consider a different example and a different type of study. First-year college students in the US were asked to forecast what their overall level of happiness would be the following year if they lived in various dormitories at their university. The forecasts gave much greater weight to physical features of the dorms, such as location and house, over social ones, such as relationships with roommates and sense of community. A year later, after the students had been randomly assigned to one of the dorms, their happiness was found to have been determined much more by the social features of their dorm than by its physical ones. The students had made a forecasting error.

Forecasting errors are quite common and we have a pretty good idea about why they come about. When you are making a choice between two houses, for example, you will focus attention on what makes those houses different and in particular on observable characteristics of difference, such as the number and size of rooms. We like to have clear reasons for why we made

a particular decision. This 'lay rationalism' means that it is much easier for us to justify – to ourselves and to other people – a house purchase based on the size of the house.

Those observable and justifiable characteristics that draw attention to themselves at the time a decision is made may not be – and indeed are often unlikely to be – the characteristics that draw attention to themselves in the experience of that decision. In the experience of our house, for example, we are more likely to be affected by factors such as how well we get on with our neighbours and by traffic noise.

It may be the case that our happiness is impacted upon by the size of the house in the first few days or weeks, but we quickly adapt to such things as we withdraw attention from them. Something which at first is novel and new – the big house or the pay rise – draws our attention but we soon get used to it and our attention quickly finds something new to direct itself at.

We do not adapt to everything, however. The unpredictable nature of the commute continues to hold our attention as we are held up in traffic or as our train arrives late. The unpredictable noise of the traffic also continues to draw our attention: a study of first-year college students in the US, for example, found that annoyance with noise in college increased over time. Moreover, there was increasing pessimism about adaptation to highway noise: after four months, under one-third spontaneously mentioned noise as something they disliked in the neighbourhood, whereas over one half did after sixteen months. The problem is that we are not very good at predicting what we will adapt to and what will continue to grab our attention.

Our memories do not serve us very well either. Imagine you have just got back from holiday and are asked how much you enjoyed yourself, and whether you would go back again. If you are anything like other people who have been asked these questions, then your answers will be influenced by two things: the most extreme and the most recent feelings. This is known as 'the peak-end effect'. Your feelings at other times during the holiday would hardly matter at all. Your overall assessment of the holiday would also completely disregard how long it lasted: 'duration neglect'. Our memories, even the most recent ones, are etched with extremity and 'recency' but not with duration. As such, they are imperfect guides to our past experiences – but they do drive our future behaviour.

For the best part of a century, economists have defined 'utility' (well-being) according to the degree to which our preferences are satisfied. If we assume that individuals are rational, fully informed and seek to maximise their utility, then the choices they make will be, by definition, those that maximise expected utility. But prior to this, we thought about utility in terms of feelings. The two definitions would produce similar results and recommendations only if people wanted most what they will

eventually enjoy best. But they do not. A good example of this is that smokers appear to become happier after cigarette taxes increase.

We are all in favour of people being free to choose, but our choices – and our memories of the experiences that follow them – may not be a very good guide to our well-being.

Given all of this, we focus on the original conception of utility in economics – happiness – rather than the current focus on the degree to which preferences are satisfied. The important thing about happiness data is that they allow us to say what is important in people's lives when they are not thinking about how important those things are: when they are not engaged in lay rationalism, for example. We cannot overstate how important that is. We ask about happiness and then we find out lots of other things about people, including their income, health, marital status, housing and neighbourhood. Then we look at how important these other things are in explaining people's happiness. In this way we can find out how important neighbourhoods etc. are, without directly asking people how much they matter, thereby bypassing their 'lay rationalism'.

In relation to urban factors, there is some evidence to suggest that air pollution and noise pollution can affect happiness. It has also been found that living in a highly populated urban area, compared to either a smaller urban town or a rural village, is negatively associated with happiness. There has, however, been little causal work examining how the physical appearance and construction of the neighbourhood affects experiences.

The measurement of happiness is gaining increasing interest from the academic community and policy makers around the world. The UK government recently took our recommendations on how to measure happiness in large surveys, and in 2012 we will have over 200,000 British respondents to a range of happiness questions. This will mean that we have the breadth of coverage in the UK to examine clear regional and locational differences in people's happiness. This could then be correlated with quality of life indices that are often used in regional research, mostly in the US, in order to explore the relationships between happiness and quality of life measures at a regional level.

The OECD (Organisation for Economic Cooperation and Development) is also very interested in monitoring happiness in large samples and these data will allow researchers and policy makers to look more closely at international differences in the determinants of happiness. From the Gallup World Poll it seems that many of the things that matter to happiness are quite similar across different countries and cultures around the world. Things could be different for urbanisation of course, but we have so far not had the data available to explore this. In future work, we should seek to look at how urbanisation affects happiness in one country compared to the next and to look further for some of the contributory

factors to any observed differences.

It is fair to say that much of the evidence to date is based on associations: we know that commuting is associated with lower happiness, but we cannot say for sure how much of that lower happiness is directly caused by commuting. This makes it pretty hard to say just how happy commuters used to long commutes would be with shorter commuting times. We have yet to fully establish causality and control properly for selection effects. In order to do so, we should continue to analyse secondary data, especially household panel data, such as the UK Household Living Survey and the German Socio-Economic Panel. We could also start to examine those who move house, their reasons for moving and the implications for their happiness. What is potentially interesting about the UK data is that it includes children as part of a youth survey. As children have little say in where they grow up, we can find out how the characteristics and experiences of the local neighbourhood when they are young impact on their circumstances and happiness when they are adults. This will help us to start to map the life-course consequences of cities and localities on people's outcomes and happiness.

The lack of suitable data does limit how far this approach can take us, however. We should therefore also make much more use of field experiments, which, with innovative designs and the right research partners, have the potential to shed some significant light on the causes of happiness that are of interest to urban economists and others. For example, akin to the US 'Moving to Opportunity' scheme, we could randomly give housing vouchers to individuals living in poor neighbourhoods to enable them to live in better neighbourhoods. We could assess their happiness and other characteristics before giving out the vouchers, and then follow up with all the residents once they have moved. Such a study with a clear strategy for identifying causality will allow us to determine the impact that neighbourhood and cities actually have on people's lives and experiences. In taking this and other research forwards, we recognise that the traditional economic approach to urban issues is important in understanding why we gather and live together to form cities. We have a clear incentive to do so since we are not self-sufficient. So by gathering in cities, we can produce more goods (due to economies of scale and comparative advantage) and therefore demand more goods, and have higher economic resources as a result.

We do not always optimise our economic resources, let alone our happiness. This has important implications for how we structure and plan major urban areas, and how we judge whether planners actually increase people's happiness. Most people around the world already live in urban areas, generating major problems to overcome through urban planning and other interventions, especially with respect to environmental and health challenges. At the very least, we should incorporate happiness effects into our models of cost-

benefit analysis, and indeed the UK is already making moves in this direction.

The planning and design of urban spaces and cities can greatly enhance people’s lives. They can also make people miserable. Researchers in urban economics, as elsewhere, need to get out into the field and directly assess the well-being and behavioural consequences of different places and spaces.

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## WHY COMPLEXITY IMPROVES THE QUALITY OF CITY LIFE

### Richard Sennett

I want to explore the concept of ‘quality of life’ in cities. My own view can be stated simply: the quality of life in a city is good when its inhabitants are capable of dealing with complexity. Conversely, the quality of life in cities is bad when its inhabitants are capable only of dealing with people like themselves. Put another way, a healthy city can embrace and make productive use of the differences of class, ethnicity, and lifestyles it contains, while a sick city cannot; the sick city isolates and segregates difference, drawing no collective strength from its mixture of different people.

This simple concept of urban ‘quality of life’ has informed my writings and my design practice through my entire career; it first came to me as a young man attending a conference somewhat like this one, held in Washington in the late 1960s, discussing mental health issues among poor urban residents. The conference focused on alienated, often violent, adolescents, at a time when many of these young people were rioting. Perhaps because most of the professionals at that conference were psychiatrists, they focused on individual psychology.

The objection I had was not just that impersonal conditions shape personal sentiments, but more that the city shapes personality in a particular way. The process of human maturation, particularly the passage into adulthood, requires that human beings learn how to deal with situations beyond their personal control, and with persons who are strangers to them, strangers who are ineradicably different, and difficult to understand. America’s racially segregated ghettos offered no such opportunity to learn this, nor do isolated ghettos today, anywhere in the world.

I’ve sought to elaborate this insight more largely. All adults in cities need

to develop certain skills of living with strangers. My own career has sought to define just what are these ‘stranger skills’ and how cities can be designed to promote this human competence—my pre-occupation from the book The Uses of Disorder, which I wrote just after attending the conference, to the book on cooperation, Together, which is just about to be published.

You’ll sense from this biographical note why my work diverges from what economists now call ‘happiness studies.’ Learning to interact well with strangers requires a toleration of ambiguity, the capacity to contain frustration, an ability to listen carefully to people whose speech, needs, or desires may seem alien; none of these skills falls within the domain of pleasure, if that’s what happiness is; indeed, the entry into adulthood occurs exactly when people become capable of feeling connected to, and even solidarity with, other people who give them no pleasure. For these reasons, instead of happiness we should stress the concept of ‘social competence’ as the measure of an adult’s quality of life.

Because cities are complex social as well as economic and geographic organisms, they are in principle a fertile soil for developing social competence. But we know in fact that they are not. If you were to be transported back to London in 1812, you would find most of the city mixed locally and loosely, the rich and poor, new migrant with old resident, commerce and housing; by 1900, London was becoming more internally homogeneous, but still with lots of loose edges where differences intersect; today’s London has sealed these edges, as in the walls of highway traffic segregating unlike communities, or shopping districts where no one lives, or offices centres isolated from the rest of the city. This history is the story repeated in today’s cities outside Europe; as they grow to giant size, they become relentlessly more homogeneous and segregated internally. One consequence is a diminished quality of life, in the developmental terms I’ve defined: any city of isolated human islands aborts the experience of difference, rendering people less socially competent.

This threat has both political and economic dimensions. People who are ignorant of lives unlike their own are going to have trouble practicing democracy, as the philosopher Hannah Arendt observed in The Human Condition; they will have trouble understanding and dealing with interests and needs not their own. Social incompetence also has an economic dimension. In self-contained economic islands in cities, the process of communicating bad news and unforeseen threats shuts down, as has occurred on Wall Street and the financial City of London; people are not looking outside themselves. The outward-looking orientation bred by social competence, by contrast, has great practical value: it enables collective realism.

I’d like close these remarks about the quality of life in cities by focusing on the Holy Grail for urban designers like

myself, the quest to build truly mixed-use environments in order that the inhabitants develop a more complex, adult understanding of one another. Much of this work has focused on housing, mixing poor and middle-class residents; this kind of design runs counter socially to the gated housing community. We’ve learned some design techniques for achieving this goal, in the arrangement of stairwells, windows, and interior spaces so that the poor are not visually stigmatised; and the architecture itself has proved successful in New York’s Stuyvesant Town, in new social housing in the London Borough of Hackney, and in one of Johannesberg’s new developments in Soweto. But these mixed settlements are all fragile; in time, the middle-classes tend to evict the poor.

In the re-planning of Beirut after its civil war, I puzzled how to avoid such eviction, and came to the conclusion that the principle of mixed use is usually not pushed far enough: there has to be a tighter integration of working space and living space, as in interleaving offices and specialised factories as well as shops with housing. The key to this kind of planning is informality: leaving the mixed spaces loose in form, open to a succession of small entrepreneurs and businesses. Paradoxically, open, thorough-going mixed-use of this sort tends to stabilize communities, or at least we found it so in Beirut, or, in an entirely different context, on the outskirts of Oslo; such thoroughly-mixed communities have proved sustainable economically for both the poor and the middle-class. This Holy Grail of planning – seemingly so special – has in fact been an unplanned historical reality for many cities, especially port cities and trading cities from Venice to Bombay.

I invoke this model only as it bears on the issue of ‘quality of life’ we have been pondering. In thoroughly-mixed communities people have to engage constantly with fluid differences of all sorts – different kinds of activities and different kinds of people. Difference is a source of stimulation. This stimulation may not make citizens happier but it does make them more alert. My argument to you is that alertness and attentiveness to the unfamiliar, the strange, and the uncertain is an adult strength, a form of human development which urban designers and planners like ourselves can foster by taking down the internal, isolating walls of the city.

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# URBAN STRESS AND MENTAL HEALTH

### Mazda Adli

Do we need to prepare ourselves for a more urbanised and, therefore,

more depressed world? With the following article I wish to stimulate a conversation between urban planning, architecture and neuroscience, in the hope of facilitating a more nuanced understanding of how urban and rural living conditions differentially impact upon our mental health. At a first glance, there are enormous methodological differences between the disciplines of urban planning and neuroscience. None the less, considering the neuroscientific approach to the topic of cities is essential, as from it we can start to understand how city living affects inhabitants’ brain biology and could therefore influence the risk for developing mental disorders. On the bright side, there are also indicators that show a protective aspect of large cities with regards to mental health. Cities, therefore, may lend themselves to facilitating new and appropriate health intervention strategies.

Urban living is on the rise whereas rural living is becoming the exception – in all parts of the world and at an ever-increasing rate. The rapid pace of urbanisation is an important marker of the societal transition at large that has occurred over the past thirty years. Our world is shifting towards an urban, small-family or single household, and at the same time, an ageing society. In the next thirty years we will be faced with the growing challenges specific to our cities’ aged single urban populations.

But urban living is not only about getting older, it is also about getting stressed. Stress is the unspecific physiological and psychological reaction to perceived threats to our physical, psychological or social integrity. And urban living can be threatening if you don’t have enough space of your own, if you experience insufficient security, or live under unstable economic conditions. Stress increases with the anticipation of adverse situations and the fear of not having the adequate resources to respond to them. From an evolutionary point of view, stress is the mechanism that prepares us for any ‘fight-or-flight’ reaction, and also causes us to evolve in order to better adapt to our environment. Although not harmful per se, stress may jeopardise our health when stress exposure is chronic or when complete recovery is not possible.

#### STRESS-RELATED HEALTH CONSEQUENCES

What does stress do to the body? Our organism has two major hormonal stress systems, the quick responding (within milliseconds) autonomic nervous system, which controls the release of noradrenaline and adrenaline, and the somewhat slower hypothalamus-pituitary-adrenocortical (HPA) system, which is responsible for the release of cortisol, the ‘stress hormone’. Roughly speaking, the quick system prepares us to react immediately whereas the slow system’s reaction depends on the perceived danger of the situation. Noradrenaline and adrenaline increase the heart rate and decrease the heart rate variability, dilate the respiratory airways and activate blood platelets to coagulate.

Cortisol antagonises insulin and thus, under certain conditions of persistent stress-dependent dysregulation of the HPA system, results in a diabetes-like metabolic situation. It restructures body fat, promotes obesity, suppresses the immune system and may have a toxic effect on neurons in certain brain regions, particularly the hippocampus, which is important for memory functions. Repeated exposure to social stress in rats leads to abnormal processing of the so-called ‘TAU protein’ in the hippocampus, a mechanism that plays an important role in the development of Alzheimer’s disease. Stress also leads to the shortening of the ‘protection caps’ at both ends of our chromosomes, called telomeres. At the same time, stress also weakens the enzyme responsible for repairing these protection caps. When the telomeres get too short the cell can no longer divide and the tissue loses its regeneration capacity. The result is premature ageing of the organism.

#### URBAN LIVING AND MENTAL HEALTH

Living in an urban environment has long been known to be a risk factor for psychiatric diseases, such as major depression or schizophrenia. This is true even though infrastructure, socioeconomic conditions, nutrition and health care services are clearly better in cities than in rural areas. Higher stress exposure and higher stress vulnerability seem to play a crucial role. Social stress may be the most important factor for the increased risk of mental disorders in urban areas. It may be experienced as social evaluative threat, or as chronic social stress, both of which are likely to occur as a direct consequence of high population densities in cities. As for the impact on mental health, social stress seems to outweigh other urban stressors such as pollution or noise. Living in crowded areas is associated with increased social stress, since the environment becomes less controllable for the individual. Social disparities also become much more prominent in cities and can impose stress on the individual. Further, disturbance of chronobiological rhythms is more frequent in cities than in rural areas and has a negative influence on mental health and beyond. A recent meta-analysis showed that urban dwellers have a 20 per cent higher risk of developing anxiety disorders, and a 40 per cent higher risk of developing mood disorders. For schizophrenia, double the risk has been shown, with a ‘dose-response’ relationship for urban exposure and disease risk. Longitudinal studies on patients with schizophrenia indicate that it is urban living and upbringing per se, rather than other epidemiological variables, that increase the risk for mental disorders.

As urbanisation of our world is inevitable, we urgently need to improve our understanding of the threatening – as well as the health protective – factors of urban living. Evidence is beginning to surface that indicates that the urban population shows a stronger brain response to stress, and stronger cognitive impairment under stress. A recent fMRI study in the journal *Nature*, conducted

by a German research group, showed that these effects seem to occur irrespective of age, gender, general health status, marital or income status. In this study, the amygdala (a brain region that regulates emotions such as anxiety and fear) showed higher activation under stress in healthy individuals from large cities compared to their counterparts from rural regions. Interestingly, activation grew with the size of the current home city. Further, activity in another brain region associated with depression; the perigenual anterior cingular cortex was positively correlated with the time that an individual had spent in a large city as a child. The more years someone had spent growing up under urban conditions, the more active this brain region tended to be.

#### URBAN STRESSORS DURING CHILDHOOD

There is an interesting finding against the converging evidence that adverse conditions in early life can severely impact the developing brain and increase vulnerability to mood disorders in adult life. It has been shown that adverse early-life events can alter the experience-dependent maturation of the stress systems, such as the HPA system. This again results in higher stress vulnerability later in life. Inducing early life stress in rodents (for example, by maternal separation) can result in persistent increase of anxiety-like behaviour and life-long hyperactivity of the HPA system in response to stress. Early-life stress may result in epigenetic changes, which means that the activity of certain genes is altered and may even be inherited by next generations. However, the majority of these studies focus on the effects of adverse experiences such as physical maltreatment, neglect or maternal separation, and not on urban stressors which may affect children’s or parents’ well-being (and therefore influence parental attachment). Thus, further research examining the long-term stress vulnerability effects of urban stressors during childhood is necessary.

#### SOCIAL STRESS IN THE CITY

Another recent study has reported that the size of the amygdala correlates with the size and complexity of an individual’s social network. Other studies have demonstrated the correlation of amygdala activity with the spatial distance between two individuals as well as with anticipated social decline (for example, as a consequence of separation or job loss). What consequence does this have for urban planning? What does that mean in terms of the stress resilience of an increasingly urban population? What are the health consequences of higher social stress exposure and stress vulnerability of urban dwellers, given that stress is the most likely pathophysiological cause of many mental disorders, particularly depression? And from a political perspective, what actions can be taken to protect people living in dense metropolitan conditions from stress and its negative mental impact?

Our brains do not seem to be optimally designed for living in our

generation’s urban conditions, in the large, densely-populated metropolises of our world. However, there might be large inter-individual differences of stress vulnerability in an urban environment. For this reason, understanding more about stress-protective factors for city inhabitants might help us to plan appropriate public health strategies. If we assume that stress, most often of a social nature, is the major intermediate variable increasing the risk for mental disorders, then the focus needs to be on identifying and improving our understanding of the most health-threatening social stressors, and how these stressors translate into brain disorders. A look into basic stress research might help: studies show that lack of control, social threat and the fear of losing one’s social status strongly contribute to experiencing stress. These factors have been shown to affect the amygdala and the prefrontal cortex. On the other hand, there is interesting converging evidence that proteins that increase social behaviour, so-called pro-social neuropeptides, like oxytocine, can modulate these brain regions. We therefore need to better understand how these social stressors ‘project’ on urban populations in the conditions of city living, and under which conditions they overexcite the compensation and recovery potentials of the individual. How much, for example, does the subjective perception of an uncertain hierarchical order – a well-known social stressor – increase with population density, social disparity or housing conditions?

#### A LOOK AHEAD

Clearly, many inhabitants of large metropolitan areas do very well in terms of health and life quality as they benefit from better infrastructure, and a denser system of social, health care, cultural and educational options. So this leads us to ask, what are the biological, psychological and social prerequisites for healthy urban living? Answering this, and other, similar, questions by means of neurobiological studies on stress promoting and stress protective variables will be invaluable in helping politicians, city planners and health authorities to plan a healthy urban environment.

Extra risk may be associated with growing up in an urban area – as opposed to first living there as an adult – as stress vulnerability of the brain alters with age. The human brain has distinct periods of vulnerability. The neurobiological effects of experiencing urban stress in early childhood differ from those associated with the experience of urban stress later in life. Therefore, future studies should separate the impact of urban living on the maturing brain, and on the adult brain, and focus on if and how stress factors manifest under these conditions respective, and in conjunction of one another.

So many of us have left and are continuing to leave our rural environments. We seek the density of large cities for their variety of leisure activities, rich cultural life, better access to employment and anonymity; but this

seems to come at a cost. We may be paying for it with our health.

Can urban planners benefit from neuroscience? Of course, urban living has many different facets, which again may have a variety of consequences for mental health and well-being. And naturally, the layout of our cities does not project 1:1 on our neurobiology. Cities are complicated structures, and the human brain is an even more complicated organ. These are no good prerequisites for the formulation of simple ‘if-then’ rules. None the less, if major social stressors, such as certain aspects of population density and hazardous social gradients, are proven to be health-threatening, we should be able to moderate population exposure and have an impact on the urban population’s – or perhaps better said, on the majority of humankind’s – increased risk of mental health problems. We should bear in mind that these factors apply to cities of the western world. The urban challenges in the megacities of middle- and low-income countries may vary, as they bear greater challenges in terms of poverty, steep social gradients, poor hygienic standards and poor safety. These factors may impose additional and potentially stronger stressors on the population. The World Health Organization has highlighted stress as one of the major health challenges of the twenty-first century. Urban living is quickly developing as a major contributor to this. The challenge can, however, be tackled by joint action between life sciences, social sciences, urban planning, architecture and politics.

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# HEALTHY PEOPLE IN MODERN CITIES

### Detlev Ganten

Science and technology have always been and will continue to be the driving forces of developments in societies, especially those that address the questions of where and how we live. The modern cities of today, as well as their architecture and infrastructures, are the most visible examples of scientific and technological progress.

Medicine is no exception to this progress, especially in light of the advances made in the fields of genetics and genomics. About ten years ago, an international effort to sequence the human genome allowed the first insights into our hereditary set up – and the cost of this international project was enormous. Now, with new-generation sequencing methodologies, genome sequencing has become a routine laboratory technique, and at a relatively low cost.

New scientific fields, namely ‘genomic and molecular evolution’ and

‘evolutionary medicine’ (also known as Darwinian medicine), have been made possible by modern sequencing technologies, and are opening up new vistas in science and medicine. Today, all model organisms and important steps in the path of evolution have been sequenced, or are available for detailed molecular analysis. We can now start to answer questions about how life emerged 3.5 billion years ago and where we, homo sapiens, come from. We can begin to understand our genomic history, and know more about the appearance of modern man in Africa and how he colonised the world over the last 100,000 years. It is evident from this research that our genes and important functions have been conserved throughout billions of years of evolution. We know that the human body is a living archive of the origins of life. The more important specific genes are for biological functions, the better and longer they have been conserved in evolution.

Modern genome research and the new concept of evolutionary medicine open up completely new avenues to a better understanding of the basis of health and disease. In addition to asking proximate questions about how biological mechanisms of a disease are best understood, diagnosed and treated, we can also now investigate the ultimate question: why do we get sick?

With our evolutionary ‘old’ biology we are living in a completely new and fast-changing (mostly artificial) human-made environment: the city. No longer are we labouring hard to harvest a scarce living, like in the stone age. No longer are we running away from big animals to avoid being killed, or chasing smaller animals in order to provide food for our families. Much of modern, urbanised society is now dependent on industrially manufactured food, ordered by smartphone from the department store and delivered straight to our door. We eat too much, and consume foods that are too salty, sweet and full of fat. Some of us lead sedentary lives, and make a living by sitting in front of a computer all day and moving knowledge electronically to great distances around the world. Energy is provided from the socket and no longer burnt by exercising one’s musculoskeletal system.

**DISEASES OF CIVILISATION**

We are thus facing a new challenge. In urbanised life, and in industrialised countries, new common diseases are emerging: obesity, diabetes, cardiovascular diseases, hypertension, musculoskeletal diseases, osteoporosis, mental health problems, depression and so on. The underlying cause of these ‘diseases of civilisation’ is that our modern lifestyles, which are manifest in our cities, are not in tune with our biological heritage.

For the well-off in our globalised world, constantly sitting around became an attribute of an existence where physical work was no longer necessary; a result of the technical progress and affordable motorised mobility for a broad sector of the population, and a development which first emerged in the twentieth century.

This century was one characterised by reduced physical work and physical mobility – facilitated by high-tech cars and public transportation for the masses, as well as by more mundane innovations such as electric corkscrews and battery-powered pepper mills, for example. This is historically comprehensible since, until recently, relatively hard physical work was the standard, and the aspiration to afford some comfort in daily life was obvious and wide-spread.

Meanwhile it has become clear that such comfort, which some can afford due to technical progress and unequal economic growth, can have negative consequences for our health. Hundreds of millions of humans no longer challenge their bodies physically and this, in turn, leads to functional impairment. Thinner, weaker muscles, whose abilities to burn carbohydrates and fat is lessened, as well as fragile bones, increased resistance to insulin and an increase in heart disease, are threatening those who lead an idle existence. From an evolutionary perspective the bodies of physically inactive humans are in a highly exceptional state. But, because of our urbanised lifestyles and physical inactivity, it is not our external stature that will be affected so much as our inner well-being and health, and these stresses will frequently go unnoticed.

Therefore the discrepancy between our biological heritage and modern lifestyles makes us ill. The gap between evolutionary ‘old’ body functions, on the one hand, and modern lifestyles in new urban societies, on the other, results in the abovementioned ‘diseases of civilisation’. They are the biggest burden on health care systems within modern knowledge-based societies. Evolutionary medicine makes use of these new insights for the research, diagnosis, treatment, and, most importantly, prevention of diseases.

A large part of our modern civilisation depends on the close collaboration and exchange of ideas between peoples, a necessity enhanced by our fast-urbanising globe. Moving back to the countryside, as some romantic ecologists propose, is not a realistic solution for solving today’s health problems. The great achievement that makes humans unique, and which explains our special path in the animal kingdom beyond biological evolution, is not only our coexistence in dynamic societies but also, and primarily, our creative cooperation based on a division of labour.

**NEW INFECTIOUS DISEASES.**

The city is a stimulus and source of continuous progress and development of new technologies. The city is the place where humans can realise cooperative and collaborative lifestyles. But history also shows us that the development of new settlements and cities was followed closely by the rise of new diseases. At the end of the last ice age, around 10,000 years ago, the world flourished. Humans changed from being hunter-gatherers to building and settling down in villages and towns and developing farming and cattle-breeding technologies. They exploited

new food sources, they domesticated the first plants and animals, and the number of the people on the planet increased. By actively planning their environment at an ever-increasing rate not only did human behaviour change but also, without us being aware of it, the behaviour and opportunities of micro-organisms. This is the moment when infectious diseases were born in evolution.

All kinds of animals, from mosquitos to rats, were attracted by the fields, grain stocks, waste and faeces that were mounting in permanently growing settlements, villages and cities. Infectious microbes and their carriers, bigger animals, including mice, rats and humans, found their paradise: protection from predators in the city and a wide range of ‘food’. Along with them came many pathogens, which discovered humans as a new host. As this host reproduced more rapidly, their future was secured. Before major human settlements and urbanisation, there were simply too few people living together to keep an infectious agent alive. People lived in quite small units and continually moved from one place to another. If there was a pathogen that developed and survived by transfer from human to human, the whole group would eventually be wiped out and the pathogen itself reached, literally, a dead end. Or natural selection ensured that only a few very resistant individuals survived, and that this resistance was passed down to their offspring and gave the microbe no further chance to reproduce.

The success of deadly epidemics caused by viruses or bacteria that decimated the population periodically in history was only possible under the condition of settlements and the development of larger stable communities. With the development of urban civilisation, infectious and virulent microbes no longer meet dead ends, but move from host to host, surviving and multiplying happily. In cities, even the most deadly viruses and microbes can survive, since in these large, densely packed populations, there is always a new host to infect. With humans now travelling as much as they do, the whole world population is a potential host for infectious agents, and thereby the pool of pathogen carriers is ever-increasing.

Modern medicine has developed strategies to counteract these new and unique threats brought about by urbanisation: standards of hygienic and other implementations, for example, which aim to control major infectious diseases. Aside from vaccines and antibiotics, modern water and wastewater management systems are crucial for survival in the city and for the fending off of diseases. These same systems, however, lead to extreme vulnerability in humans if they become contaminated by disease. Major epidemics, such as SARS, EHEC and Bird flu, and the attention paid to them internationally, attest to the reality of the threats and the possible social and economic costs to humans. If concepts for healthier cities are going to hold ground, they need to take account of these new insights from evolutionary medicine.

**DISEASE PREVENTION IS THE NAME OF THE GAME**

In many instances we know why we get sick and how to avoid becoming sick. It is more effective and cheaper to prevent a disease than to treat it, which is why architects, city planners, politicians and medical practitioners will have to collaborate more effectively if they want to learn from each other and build better and healthier cities. Cities are places of collaboration and cooperation. We have to make better use of them if we want to improve our future.

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# THE IMPORTANCE OF THE BUILT ENVIRONMENT TO CHILDREN’S WELL-BEING: WHAT DO WE KNOW?

## Elizabeth Burton

There is growing consensus that the built environment plays a significant role in the well-being of children. Where you live makes a difference: evidence from Washington in the United States, for example, found that children living in deprived neighbourhoods were significantly more likely to be obese than those living in more affluent neighbourhoods, even when neighbourhood-level socioeconomic status was taken into account. Most of the research to date has been carried out in the US, Australia and Europe and, therefore, this essay will deal primarily with the challenges facing these childhood populations. In these contexts, concern for children’s well-being has shifted away from communicable diseases to issues of broader well-being such as whether children are gaining the skills, competencies and experiences they need to lead a successful and happy life. There are questions about how relevant or applicable the findings are for many parts of the developing world, where child mortality rates are still high and children’s lifestyles contrast starkly with their western peers. However, there is growing awareness in China, Japan and India of many of the most prevalent threats faced by western countries, including childhood obesity, teenage depression and anxiety.

Children’s use of space has changed in the last few decades – the space they

inhabit is shrinking, as they spend more time indoors and being ferried to destinations by car. This stems from a wider risk-aversion in society: fears about crime, traffic and ‘stranger danger’, as well as increasing availability of home entertainment. Older children travel further afield, and boys tend to be given more freedom to roam than girls.

The built environment of the home and outdoor space immediately surrounding it is therefore of central importance to children’s well-being because of their prolonged exposure to it (at least sixteen hours per day). It also influences their health in adulthood: evidence from England and Scotland suggests that poor housing conditions, such as crowding, lack of a private tapped water source and poor ventilation, in childhood is significantly associated with higher mortality in adulthood, in some cases even after controlling for socioeconomic status.

**THE HOME**

Lack of space in the home has been linked to a wide range of impacts, including poor social interaction, low educational achievement and cognitive development, behaviour and socio-emotional problems and poor respiratory health. In Hong Kong’s dense urban environment, for example, personal space appears to be important in influencing children’s academic performance, affording them the space to study. In the UK context, evidence about the health impacts of crowding on children’s health and development have been influential in shaping policies such as the Mayor’s London Housing Strategy.

Housing quality is also important to children’s well-being, being associated with socio-emotional and mental health, cognitive development and respiratory health. Increased noise levels in the home from, for example, street traffic, neighbours or air traffic, seem to be particularly problematic for children, having implications for their physical and mental health, and their behaviour. A study of 1,048 German children found that exposure to road traffic noise at home was significantly associated with higher blood pressure. Insufficient daylight has been found to be related to depressive symptoms, and strong evidence supports a link between children’s asthma/poor respiratory health and poor air quality, presence of dampness and mould and inability to keep the house warm, as well as between exposure to lead paint and neurological damage in young children, cognitive impairments in adolescence and problems with impulsivity.

There are also more pragmatic aspects of the physical design of housing that can create health risks for children: stairs and steps (associated with falls); windows and balconies (entrapment and falling); pools and ponds (drowning or near drowning); and design/location of cookers, fires, radiators and other heat sources (burns and scolds). In England, the Housing Health and Safety Rating System includes health hazards for children, and is now being used by local authorities in the regulation and maintenance of new homes

to ensure they provide safe environments for children.

Housing type also appears to be relevant for children’s well-being. In Austria, children living in high-density flats are more likely to suffer mental health problems than their counterparts in high-density row housing. This may be because flats, especially in high-rise blocks, fail to provide adequate play opportunities, or because they are linked to depression in women, which has implications for children where these women are mothers. Context and culture is, however, very important here: high-rise living is the norm in many countries, such as Israel and Hong Kong, and very different expectations of what is high and low density exist: ten dwelling units per hectare is considered low density in the Netherlands, and 100 units per hectare high density, compared to ten to 20 dwelling units per hectare for low density and 290 per hectare for high density in Israel.

**THE NEIGHBOURHOOD**

Interest in ‘child-friendly communities’ has grown recently, mainly because of recognition of the importance for children of being outdoors, for unsupervised play and physical activity. Pressure has come from the need to combat rising obesity, which is also linked to mental health. Child-friendly communities provide safety, through traffic calming devices, such as ‘home zones’, and opportunities for play, through incorporation of natural features, public art and parks. A Dutch survey of 448 children in 10 neighbourhoods found that a considerable proportion of the difference in walking and cycling activity between neighbourhoods could be explained by built environment characteristics such as frequency of pavements, pedestrian crossings, frequency of cycle tracks and the number of recreation facilities. Street layouts are also important in encouraging active travel: a study of schoolchildren in Norfolk, England, found that children were more likely to walk to school if they had a high density of roads in their neighbourhood. The quality of streets is also important, with a study in Ontario, Canada, finding that presence of street trees were significantly associated with students walking or cycling to school. Safety – or rather the perception of safety – and the presence of multiple land uses and facilities are also important factors in encouraging physical activity in children.

There are more mixed findings for urban density. One study of Nanjing, China, found that lower residential densities were associated with more active travel, while a US-based study found the opposite. A review of thirteen studies from the US, Australia, Canada, Iceland and Europe, comparing the physical activity levels of rural and urban children, found little evidence of any difference, but some evidence that suburban and ‘small town’ children were the most active.

**GREENERY AND PARKS**

The presence of greenery in the built environment plays a key role in children’s

well-being, whether experienced in the immediate residential environment, in play settings or even by viewing it through windows. Children’s contact with greenery and trees in the built environment has been linked to a range of physical, mental, developmental and emotional benefits, including reduced aggression, alleviation of stress, stimulation of creative play and social interaction and speedier recovery from operations. Children with attention deficit disorder, for example, function better after activities in green settings or in green play areas.

Urban parks provide many opportunities for children and young people: free play, exploration of nature, physical activity, improvement of motor and coordination skills, and interaction with other children. Proximity and accessibility of green open spaces to residential areas is positively associated with increased overall levels of physical activity across age groups. The National Institute for Clinical Excellence, which provides guidelines, recommendations and advice on health care and public health to England and Wales, now recommends the incorporation of green spaces in urban development to encourage physical activity.

**CONCLUSIONS**

Looking across all the research to date, evidence suggests that to best support children’s well-being the urban built environment should have the following characteristics:

- Homes that have sufficient space and good arrangement of space to provide well for privacy;
- Buildings with adequate noise and heat insulation, while allowing sufficient ventilation and daylight;
- Housing that faces the street and includes small transitional spaces between front doors and footways;
- Residential areas that have connected street layouts, incorporating trees and greenery, with features that reduce the speed of cars;
- Mixed land uses with plenty of local facilities and parks; and
- Play areas that use natural features in an imaginative way.

However, children also need to be allowed more opportunities to roam free and play outside without interference from adults, a behaviour that can be facilitated by good neighbourhood design. Children whose lives are too controlled may not have the chance to learn some key life skills that are best acquired through self-directed experiences, and may find it increasingly difficult to cope as they grow up. A recent UNICEF review found that countries where children enjoy comparatively high levels of everyday freedom prior to adolescence showed the highest levels of well-being and best outcomes for family and peer relationships. The lives of UK children may now be so constrained that when as adolescents they eventually gain a degree of freedom, they struggle to cope with the responsibility.

It could be argued that governments should be more proactive in providing and shaping the built environment to promote children’s well-being. Alternatively, policymakers could ensure regulatory controls are more stringent. Some call, for example, for the reintroduction of minimum space standards for housing. These policies are, however, a relatively blunt instrument, and may have a detrimental effect on housing development at a time of housing shortage. Health providers have started to take the built environment seriously. For example, in the UK, the National Institute for Health and Clinical Excellence (NICE – the independent body responsible for national guidelines on health promotion) recommends the incorporation of green spaces within cities as a way of improving health.

More research is needed in order to develop our understanding of the mechanisms by which the built environment affects children’s well-being. But carrying out research in this field is extremely challenging: it is difficult to conduct trials and longitudinal research, which limits the possibility of uncovering causal effects and much research, though informative, cannot be applied to practice. However, there seems to be consensus that the built environment makes a difference. With enough knowledge there is the potential to actively promote the mental health and well-being of children by providing built environments that support their development, help them reach their potential, teach them creativity and problem-solving skills, encourage them to be active and fit, enable them to have good relationships and strong social networks – ultimately laying the foundations for a happy, successful life.

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# HEALTH FOR THE URBAN POOR

## Ernestina Coast and Ama de Graft-Aikins

**WHY FOCUS ON THE HEALTH OF THE URBAN POOR?**

Urban growth is transforming populations’ health, especially for the urban poor. One in three urban dwellers – 828 million people – lives in a slum, producing slum cities within cities. More than 90 per cent of slums are found in developing countries. Slum dwellers are not the only poor residents of cities, but they do represent a clustering of living conditions within a city. As urbanisation continues, even if the relative levels of urban poor remain constant, the absolute number of people living in poverty in cities will rise. Poverty is set to become an increasingly urban phenomenon.

Urban poor populations, and the places where they live, are diverse.

Neighbourhoods are not uniformly poor, and being poor does not necessarily mean suffering ill health. Health is determined by many diverse factors, including income, gender, age, access to health services and infrastructure. Yet we know little about the health of the urban poor.

#### HOW CAN WE GET DATA ON THE HEALTH OF THE URBAN POOR?

Rapid urban growth places increased demands on already overstretched agencies to collect data from and about the urban poor. Even aggregate ‘headcount’ data can fail to keep up with rapidly changing urban populations. We know that slum residents tend to be less likely to be included in censuses and surveys (they might want to remain hidden if their residence is illegal), that slums are difficult places for interviewers to work in, and that slum households tend to be less likely to be included in routine mapping of neighbourhoods. Many urban poor are hard to reach from the perspectives of the people that run censuses and surveys.

The data that do exist tend to be aggregated at a level that ignores and masks differentials within cities and between neighbourhoods. We need disaggregated data if we are to really understand, and improve, the health of the urban poor. Not only do we need more distinction within cities, we need more distinction between cities. Continuing to compare ‘rural’ and ‘urban’ populations within countries (the dominant approach of demography and health surveys) doesn’t make sense when we know that the boundaries between urban and rural are fuzzy and continually evolving in planned and unplanned ways. It also masks differences between cities of different sizes and wealth. We know very little about the health of poor people in the world’s 500 smaller cities (between one million and ten million inhabitants), because research has tended to focus on megacities with more than 10 million inhabitants.

#### URBAN ADVANTAGE OR URBAN PENALTY?

How we measure urban health affects whether we find an urban advantage, disadvantage or even a ‘double burden’ in health. An urban advantage in health tends to be found when analyses just focus on crude urban versus rural comparisons, ignoring whether people are poor or not. When we compare the chances of survival of young children between urban and rural areas, the chances of dying by their first birthday tend to be higher in rural areas.

But these sorts of comparisons ignore the heterogeneity of urban areas and populations. Averages at the rural and urban level can disguise significant variations, not just in terms of health outcomes, but also in terms of health systems and services and living conditions. In our opinion, such crude urban-rural comparisons mask the real health implications of being urban and poor in many low-income countries. Instead, we need to better understand the poor–rich gaps in health within urban areas. Where the evidence exists, it suggests that many urban poor, in

particular children before they reach their fifth birthday, are in fact paying an urban penalty with their health.

This urban penalty might be related to a double burden of disease facing the urban poor. There is rising prevalence of both infectious and chronic diseases in slum communities, interacting in ways that increase the chances of ill health and premature death. It is not the case, then, that chronic diseases affect only the rich: the urban poor are also affected by these ‘diseases of affluence’. Overcrowding and poor sanitation can increase the risk of respiratory, viral and skin diseases. Lifestyle and everyday responses to difficult social environments can increase population risk of the major chronic diseases. People might not have access to nutritious food, increasing the risk of cardiovascular diseases, diabetes and major cancers. Where early sexual activity occurs, perhaps due to peer pressure or as a survival strategy, and there is an increased risk of sexually transmitted infections, the risk of developing an HIV-related cancer can also increase. In conditions of extreme poverty, adults and young people may be more likely to drink alcohol, smoke and use drugs to ease everyday psycho-social stresses. Yet each is a major risk factor for cancers, cardiovascular disease and diabetes. Livelihood strategies can increase infectious and chronic health risks. For example, young people who make a living from ‘e-waste’ (electronic devices dumped as waste, often in poor urban neighbourhoods) are exposed to toxic materials that can cause serious conditions such as cancer of the lymph system, central nervous system damage and asthma.

#### WHY IS ACCESS TO HEALTH SERVICES SO BAD FOR THE URBAN POOR?

Urban populations are often assumed to have better access to health care than those living in rural areas. However, urban health systems in many poorer countries have a weak to non-existent public health structure and lack implementation and infrastructures. Rapid urban growth in many settings has exceeded the capacity of health systems to serve rapidly growing urban populations. Just because health services are located in an urban area does not mean that they are easily accessible by the urban poor. Health workers find it difficult or are reluctant to serve extremely poor urban areas. A female slum resident who is pregnant might live a short distance from emergency obstetric services, but if she needs help in the middle of the night, it might be too dangerous for her to leave her home to seek help.

Additionally, the cost of health care represents a significant barrier for the urban poor. Poor populations spend a significant part of their income on health care: it is estimated that more than 100 million people are pushed into poverty every year due to health care expenses. As the presence of multiple ill health conditions increase in urban settings, health care costs can push poor people further into poverty.

#### WHAT DO WE NEED TO KNOW?

We need to know what works to improve the health of the urban poor. The existing evidence base is tiny compared to the rapidly growing and large urban poor population, with almost no qualitative evidence to complement the limited quantitative data. We need high-quality evidence on effective and sustainable interventions that specifically target the urban poor. The starting point must be disaggregated data which makes visible the significant differences between areas and populations within cities.

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# UPGRADING DENSE INFORMAL SETTLEMENTS: THE POTENTIAL FOR HEALTH AND WELL-BEING

## David Satterthwaite

While many dense cities and city neighbourhoods are among the world’s healthiest places, others are among the world’s worst. Life expectancies at birth are half those of the healthiest cities and it is still common for one in ten children to die before the age of five. Health outcomes are even worse among the lower-income populations of such cities, with anywhere from 30 to 60 per cent of the populations living in such informal settlements. How does density figure in this?

Dense cities developed because of the advantages high density provided for the growth of industry, trade and services – what are often called the returns to agglomeration for businesses. These advantages can underpin large and economically successful cities even at the same time as health for much of the population and workforce remains very poor. For instance, Mumbai is a very successful city, but it is also one where half the population lives in dense informal settlements that take up a small proportion of the land area and which have very inadequate or no provision for water, sanitation, drainage and health care. The same is true in many other cities in Africa, Asia and Latin America. As Arif Hasan notes in ‘Designing Density in Karachi: Alternatives to Apartment Blocks’ (2011), 62 per cent of Karachi’s population live in informal settlements that take up only 8 per cent of the land

area. Similarly, in Nairobi, more than half the population lives in informal settlements that take up only a few per cent of the city’s land area.

But high density also brings potential advantages for the public good. Returns to agglomeration apply not only to businesses but also to the health and quality of life of city dwellers. For instance, dense cities and city districts provide agglomeration economies for the provision for piped water, good sanitation, drainage, health care, schools, policing and emergency services – but city governments need the competence and capacity to act on these, and they often have neither. High density informal settlements usually benefit residents by lowering the time and cost of travel to work and to access services – including those services that make cities special places to live, such as theatres, music venues, museums, libraries, the visual arts, dance, festivals, the enjoyment of historic buildings and districts, diverse choices for eating and the enjoyment of being in a diverse and vibrant place. Cities have also long been places of social, economic and political innovation that have often driven similar changes at higher levels of government.

The residents of high-density informal settlements in central locations value the easy access that such areas provide to income-earning opportunities. The lower or more unstable a person’s income, the more they value accommodation close to income-earning opportunities. Dharavi in Mumbai is a popular place to live among low-income groups, not because of its health advantages but because of the economic advantages, which result from the large concentration of income-earning opportunities there. The pavement dwellers in Mumbai live where they live not for health advantages but for the quick, easy and cheap access to income-earning opportunities. In large cities, most low-income groups do not want to move to the city periphery where land may be cheaper and more space available because it brings such high costs in time and money getting to and from work. Cities that work well have diverse accommodation possibilities for lower-income groups so they have a choice with regards to the trade-offs between good location, space and housing quality.

Dense cities also provide more possibilities of combining a high quality of life with lower greenhouse gas emissions. For instance, energy use per building can be cut far more in terraces and apartments than in free-standing housing. Dense cities make high-quality public transport cheaper and, when well-managed, encourage more walking and cycling. Compact urban development can interweave densely settled sites well-connected by public transport with green spaces for sport and recreation and enable urban dwellers to tap into local ecosystem services. Many of the most desirable and expensive residential districts in European cities are also high-density areas, often with terraces with three to six storeys as, for instance, is the case in Chelsea, London. High-income groups choose to live in such areas because of the high quality of life they provide.

There is not much point in singing the virtues of dense cities if these virtues depend on a competence, capacity and accountability of city and municipal governments that is lacking. And what can be done for the hundreds of millions of urban dwellers facing very poor health and living conditions in high-density informal settlements? What to do about the informal settlements that may have first developed on the city periphery, but, with the growth of the city, now have central locations that are very valuable and are thus under threat?

There are examples that show how dense informal settlements can be transformed into high-quality healthy living environments without displacing their low-income populations. In Thailand, the national government’s Community Organizations Development Institute (CODI) channels government funds in the form of infrastructure subsidies and housing loans direct to community organisations formed by low-income residents of informal settlements. These community organisations then plan and carry out improvements to their housing or develop new housing, and work with local governments or utility companies to provide or improve infrastructure and services. From 2003 until 2010, CODI’s Baan Mankong (secure housing) programme approved 745 projects, covering a total of 80,201 households. A considerable expansion of the programme is also planned within the next few years. Most of the participating communities had high densities but managed to secure more space per person within each house by expanding up to two to three storey terraces as they rebuilt.

This initiative has particular significance in three aspects: its large scale, its substantial community involvement and the extent to which it seeks to institutionalise community-driven solutions within local governments so that they address needs in all informal settlements in each urban centre. It is also significant in that it draws almost entirely on domestic resources, through a combination of national government, local government and household or community contributions. Support is also provided to networks of community organisations formed by the urban poor, to allow them to work with municipal authorities and other local actors and with national agencies on urban centre-wide upgrading programmes.

It is common for informal settlements to have densities of 300 to 500 people per hectare. By upgrading to two- or three-storey terraced housing, the Baan Mankong communities were able to achieve much improved housing conditions and public space provision. Similar densities are also evident in some high-quality residential areas in wealthy European cities, typically four- to six-storey terraces.

Informal settlements with much higher densities – for instance between 1,500 and 3,500 people per hectare – present more of a challenge. This is the case in some of the informal settlements in Nairobi, in Dharavi in Mumbai, and

in some residential areas in Karachi. In principle, it is possible to support low-income housing development to achieve high density, applying the lessons of successful urban upgrading, but transferring them to high-density low-rise developments. But it is difficult for residents and their organisations to retain control of upgrading when this involves the construction of multi-storey buildings, as was the case in Sri Lanka, leaving them open to displacement or ill-suited upgrades.

Arif Hasan and colleagues have shown that it is possible to achieve high densities while meeting the needs and priorities of low- and middle-income residents in Karachi. Rather than constructing multi-storey buildings, small residential plots can be developed incrementally by the residents themselves, as long as the initial construction is sufficiently solid to allow safe expansion. This approach allows the family to retain control of the land and its development. Densities of up to 2,800 people per hectare were possible based on this kind of household-led development.

However, in very high-density settings, the trade-off between indoor space, space for transport, public and private open spaces such as squares, parks and gardens and space for public amenities is complex.

Bringing trunk infrastructure and a functioning road network into a dense informal settlement usually requires some loss of housing, and therefore the displacement of residents. So too will any expansion of public space and public services, such as schools and health care services.

One solution to this trade-off in very high-density informal settlements is to acquire land next to the settlement being upgraded so as to allow some reduction in density. Such land is, however, rarely available. To avoid moving (or being moved), residents may choose to sacrifice space within their homes for the economic advantages of the location and to maintain their social networks. Overcrowding is usually more tolerable if there is good provision for piped water, electricity and functioning, safe toilets and waste water disposal in each home.

Initiatives are underway that seek to upgrade informal settlements with very high densities. One such upgrade is ongoing in Pune, India, managed by Mahila Milan, a federation of women’s savings groups formed by those living in informal settlements or on the pavements, the National Slum Dwellers Federation and the Society for the Promotion of Area Resource Centres (SPARC). At the core of the programme is a process that engages each household in developing and agreeing to the best trade-offs for the upgrade. Another example can be found in Dharavi where around 600,000 people live in 2 square kilometres (1.2 square miles). An alternative plan to its commercial development centres around developing upgrading plans section by section with residents.

The trade-offs between living space and public amenities for any high-density upgrade are complex. These initiatives share a commitment by city governments

to work with all the residents and their community organisations to seek the best workable compromise. This is much easier for governments in cases where representative organisations have been formed by those living in informal settlements and want to work with them, as is the case with the national and city federations of slum or shack dwellers that are now active in over twenty nations.

High density can serve development when it is created by people’s choice, even if this means living in informal settlements. This is especially so when city governments work with those living in informal settlements to take advantage of their agglomeration economies and provide the infrastructure and services that can transform health and quality of life.

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# LEARNING FROM

## HONG KONG'S HOUSING SHAME

### Society for Community Organization

About 80,000 people were living in inadequate housing in Hong Kong in 2010, according to official figures, including in so-called ‘cage homes’, cubicle apartments, roof-top houses and small sub-divided and partitioned units. These homes and living spaces are usually less than 9.3 square metres (100 square feet) in size, but cage homes tend to be just 1.9 square metres (20 square feet). Residents living in these habitats include the working poor, the unemployed, new immigrants, people suffering from mental illness, ex-offenders and other marginalised and socially excluded groups. These residents face multiple housing-related problems, including poor ventilation, small living spaces, stressful relationships with their neighbours and, despite the poor quality accommodation, unaffordable rents.

Over the last thirty years, the Society for Community Organization (SoCO) has been working with grassroots groups to fight for reasonable living standards in Hong Kong. SoCO individually visits poor households and follows up on their needs, helping them to fight for public housing allocation and livelihood protection. Each year, the organisation assists 1,000 low-income cage home residents to obtain public housing allocations and provides housing, employment and financial consulting services. Despite our successful lobbying for a number of policy changes, inadequate housing remains a significant problem in Hong Kong. In order to help increase awareness of the difficulties faced by poor urban residents, we have compiled a series of short profiles of cubicle and cage home dwellers. These portraits provide a sense for what life is like for some of the residents of Hong Kong’s cubicles and cage homes.

#### PORTRAITS FROM HONG KONG'S CUBICLES AND CAGE HOMES

In Sham Shui Po, an older district in Kowloon, Mr and Mrs Wu live in a small cubicle: a 4.6 square metre (50 square foot) apartment so small that it is difficult even to turn round, containing no other furniture than a bed, and no electrical appliances. The tiny cubicle is extremely hot in the summer. As Mr Wu said, ‘There is only one window, but I dare not open it, as it is full of rubbish outside. The temperature is well over 30 degrees now. I have to go up to the rooftop to sleep every night. It is just too hot to sleep inside.’ Sixteen-year-old Wing lives in a neighbouring cubicle with his parents and younger sister, which costs them US\$193 (HK\$1,500) per month of the household’s monthly income of US\$514

(HK\$4,000). Wing says, ‘After school, we bring two chairs up to the rooftop and do our homework. We don’t have a desk at our home, so we use the chairs as desks. My mum, sister and I stay up at the roof to eat and chat every evening. Sometimes, we play games up there too, and then go back to our cubicle after 11pm to sleep. Yes, the roof is full of trash, as long as you don’t look at it, it’s no problem.’

Rooftop living is equally challenging. Lau Yip Sum, aged eight, lives in a 9.3 square metre (100 square foot) cubicle on a rooftop with his family. Here, too, temperatures can be very high, and his family cannot switch on the air-conditioning continuously, which makes Yip Sum reluctant to go home. Fortunately, a social worker helped him to access free tutorial class at the Community Learning Centre, which provided him a more comfortable place to study after school. Yet, when at home, living conditions are far from healthy: ‘Toilet, ceiling ... in any area you can see cockroaches and mice, and sometimes they are dead!’ said the scared and helpless Yip Sum. His health has deteriorated, and he falls ill easily: he was ill with a fever for several days and caught pneumonia in the previous year, and his eye was wounded by his younger brother at night when they were asleep in their narrow bed. The family has been waiting for public rental housing for more than three years and it is still not clear when a flat will be found for them.

For 54 year old Chau Kam-chuen, the economic decline that followed the 2003 SARS outbreak in Hong Kong forced his employers to reduce his working hours as a chef, following which he reluctantly retired and was unable to find other work. He fell into financial difficulty, and was forced to take up increasingly poor housing: ‘I used to make over HK\$10,000 [US\$1,286] a month, and was using HK\$2,000 [US\$257] for rent. I became unemployed and used up my savings. When the landlord raised the rent, I moved into a HK\$1,500 [US\$193] [per month] cubicle; then the landlord there raised the rent too! Since September 2007, I have been paying HK\$900 [US\$116] [per month] for an illegal caged bed space of less than 20 square feet [1.9 square metres]’. Having been promoted from waiter, to headwaiter and later chef during the ‘golden era’ of the 1980s and 1990s, Chau is now relying on Comprehensive Social Security Assistance (CSSA). Although he has been living in Sham Shui Po for more than twenty years, this is the first time he has had to share an enclosed living space of 74.3 square metres (800 square feet) with nearly forty other people, breathing stale air and queuing up for hours to use the toilet. When he first moved in, Chau was living through a period of depression, until SoCO found him: ‘Soon after I moved in, social workers came and visited. I didn’t trust them at

first, didn’t think they could help me, I couldn’t help myself.’ After a few more visits, he opened up and has become friends with others who share similar past experiences: ‘I’ve become more positive since then.’ His major concern is now finding a job. Chau is a strong man in his fifties, but most of his teeth are gone, and finding a job is not an easy task for him. ‘No boss will employ me. It’s just so sad.’ Chau has had many frustrating job-hunting experiences, but he is determined not to give up. ‘If I have a job, I don’t need to rely on CSSA. I’ll work hard and support myself. I can then move to a bigger place, a place with more privacy.’

Fung Kam-ho, a 43 year old unemployed waitress, has a ‘suite’ of just 9.3 square metres (100 square feet). She has suffered mental health problems, following a breakdown in 2004, and now relies on public assistance and has applied for Compassionate Rehousing in a public housing estate. Kam-ho’s neighbours are mostly prostitutes and second-hand goods traders but, compared to the cubicle she lived in for decades previously, it is indeed a great improvement. There, seven or eight people lived under the same roof, but Kam-ho was the only female and lived in fear. She admits that her mental condition was very bad when she was staying there, and while she wanted to move, living on public assistance, she did not have many choices and could only move from one cubicle in Sham Shui Po to another, and all were just as shabby and worn-out as each other. Now Kam-ho’s wish is to gain access to public housing, so that she can have a place of her own, a bathroom, a kitchen and a living environment that is not as lousy as her present one, and to have a new start.

#### INADEQUATE HOUSING AND HEALTH

As these portraits suggest, living in inadequate housing is likely to have a detrimental impact on residents’ physical and mental health, which may already be poor in many cases. This is backed up by research conducted by SoCO since 1990 on cage homes and cubicles, which shows that chronic illnesses are common amongst residents, with only 21 per cent of cubicle residents and 31 per cent of cage home residents surveyed not suffering any chronic illness. Respiratory disease is one of the most common chronic illnesses, and, while the precise numbers have varied, respiratory diseases have tended to rank high in SoCO’s different studies across the years. For example, 22.2 per cent of cubicle residents and 22.6 per cent of cage home residents surveyed in 2009 were suffering from respiratory disease.

Such high rates of disease are not difficult to understand in light of residents’ over-crowded living areas, which facilitate the transmission of germs. They also reflect the concentration of socially excluded groups in inadequate housing: the ‘dumping ground’ for groups such as ex-offenders, drug-abusers and people suffering from mental illness. These groups made up 31.1 per cent of inadequate housing residents in 1997 but only 14.4 per cent in 2009, thanks in part to the improvements in housing policy

successfully lobbied for by SoCO. Despite a reduction in the percentage of residents living in inadequate housing that have severe mental illness, from 8.9 per cent in 1997 to 5.2 per cent in 2009, these figures remain significantly higher than for the city as a whole. When surveyed by SoCO, 40 per cent of people with mental illness said that their mental health had worsened as a result of living in inadequate housing. Again, this impact is not difficult to understand in light of the small spaces in which people are living, and the stressful relationships they have with their neighbours, who must also share such spaces.

The results of SoCO’s research are consistent with official statistics. Poor people in Hong Kong are more likely to rate their own health as fair or poor than other income groups: nearly 47.7 per cent of people with ‘no income’ and 40.1 per cent of people earning less than US\$1,286 (HK\$10,000). The same findings arise from other physical and mental health assessments: the median scores for physical health as assessed by the ‘SF-12’ scheme, for example, are 47.7 for people with ‘no income’, 50.5 for people earning less than US\$1,286 and 51.4 for people earning US\$2,572 (HK\$20,000) or more. SoCO’s own analysis of the differences in mental health (as measured by the CES-D scheme) by district found that mental health was significantly worse in Kwun Tong (CES-D score of 29.0), Sham Shui Po (22.0) and Yau Tsim Mong (25.0) than in Hong Kong as a whole (17.0). These three districts are old urban areas in Hong Kong, where much inadequate housing is concentrated. While the study is not conclusive, and does not prove any causal relationship, it is at least an attempt to fill a gap in the official statistics to explore the relationships between inadequate housing and mental health within Hong Kong.

SoCO’s research is also consistent with various academic studies in Hong Kong and elsewhere on the relationships between housing and physical and mental health. The transmission of tuberculosis in Hong Kong, for example, has been found to be facilitated by crowded living conditions in rooms and bedsits, as well as being a disease of the poor more generally. The connections between poor housing and mental health have been explored internationally, and various correlations between housing quality and mental wellness have been identified. The subject has, however, received relatively little attention in Hong Kong:the only available local study, conducted in 1971, is now rather out of date.

#### RECOGNISING AND ACTING ON HONG KONG'S HOUSING PROBLEM

Unfortunately, the Hong Kong SAR Government does not approach the issue of housing from a health perspective. While the government has promised to house public housing applicants within three years, many have to wait much longer due to various discriminatory housing policies, as well as a lack of supply. New immigrant families may have to wait seven years, because they are regarded as non-permanent Hong Kong

residents, while non-elderly single people have to wait for more than ten years as a result of the government’s efforts to control demand by limiting the supply of public housing for single people. Despite the 50 per cent increase in public housing applications from around 100,000 in 2006 to around 150,000 in 2011, the government only promises to build 15,000 public housing units per year in the coming years. Residents’ health is thus ignored by housing policy, which forces them to remain for long periods of time in poor living environments while they wait helplessly for public housing.

To improve the health of residents living in inadequate housing, the government should start by commissioning a comprehensive study on health and housing in order to understand and recognise the nature and extent of the problem. This study should then trigger a review of existing housing policy, considering changes such as shortening the waiting time for public housing, subsidising residents of inadequate housing to enable them to live in a healthier living environment while they wait, enhancing primary health care and rehabilitation services and, in particular, initiatives that focus on socially excluded groups.

The evidence linking poor housing and health is clear, yet the issue receives little attention in Hong Kong. Unless this is recognised, and the related complex problems of poverty, insufficient housing supply and lack of social support are adequately addressed by the government, the health of Hong Kong’s residents will remain in danger.

***Society for Community Organization (SoCO) firmly believes that everyone should be entitled to equal rights. SoCO is an incorporated, non-profit-making and non-governmental community organisation formed in 1972. SoCO has, through civic education programmes and social actions, nurtured grassroots people with a sense of civic responsibility so that they can flex their political muscle.***

## THE CHALLENGES OF BEING OPEN: DENSITY, HEALTH AND WELL-BEING

### Kee Seng Chia, Chye Kiang Heng and Kong Chong Ho

Singapore is an interesting case of a city that is at a stage of planned population increase, driven by immigration rather than by Singaporeans (whose birth rate has been steadily declining). Thus the rising population and higher density is accompanied by increased social diversity: over the past thirty years, Singapore’s foreign born population has increased from 5 per cent in 1980 to about 22.8 per cent in 2010. Coupled with an increased

mobility, shaped by the new economy of services, tourism and travel and the growing foreign born population, today Singapore faces the challenge of managing the health risks associated with high-density living, increased mobility, a more sedentary lifestyle, and the stresses associated with urban living.

Although modern Singapore has worked to manage most of the negative impacts of high-density living, such as widening inequalities, environmental degradation and social disruption, the impact on health has not been easily mitigated. The degree of interaction increases in highly dense communities, assisting in the rate of spread of infectious diseases. The 2009 H1N1 influenza virus is a case in point. In the three months following its identification in Mexico in late April 2009, it became a global pandemic affecting practically every country in the world. In Singapore, researchers tracked the transmission of the virus by looking for antibodies, a type of immune response to infection. They found a rate of infection in the general population of 13 per cent, and identified the use of public transport as a risk factor for infection. Among military conscripts, the infection rate was double that of the general population. Both findings suggest that higher degrees of social contact and interation were important in facilitating the spread of the H1N1 virus.

Singapore’s ‘openness’ can have its drawbacks in relation to infectious disease. The two major epidemics of recent years in Singapore – Severe Acute Respiratory Syndrome (SARS) and H1N1 – were both imported. Singapore’s relative openness to travel and the movement of people also means that even ‘traditional’ infectious diseases, such as tuberculosis, can be a risk. Despite control efforts, the rate of tuberculosis continues to be relatively high in Singapore, due in part to the high population density in the city and its openness to the global movement of people.

While it is easy to appreciate the impact of urbanisation and high-density living on highly contagious infectious diseases, the impact on chronic disease is not as obvious and more likely to be missed. Nevertheless, urban environments can play significant roles in chronic disease development. Being overweight and obesity are ‘conditions of modernity’ that are strongly linked to the development of medical diseases such as diabetes mellitus, hypertension and some types of cancer. Since the late 1980s, many western countries have reported a growing epidemic of obesity in their countries. Studies in India and China and other developing countries around the world have also illustrated how obesity, diabetes and hypertension seem to increase in tandem with rapid urbanisation and modernisation. Recent research has suggested the concept of ‘obesogenic environments’ as a risk factor for this ‘modern plague’. This approach recognises the importance of environmental factors in the causation of obesity and its related medical problems, and specifically identifies some urban

factors as risks. Some of these factors are related to high-density living, including the modern built environment, with its focus on convenience and minimising physical activity (for example, in the use of lifts and escalators), the urban transport network, which aims to deliver convenient and efficient mechanised transport to the masses, and the absence, in some dense cities, of parks and sports or other recreational facilities that can promote physical activity. The health impacts of high-density living need to be taken into account by urban planners and incorporated into their designs so that adverse effects can be mitigated or ameliorated.

Singapore’s health management issues today, which stem from affluence, increased mobility and diverse points of contact, are in dramatic contrast to its past, where the problems were created by poverty, congestion and poor hygiene conditions. Developed in 1819 as a port city under the British, the openness of Singapore created challenges and conflicts for urban planning and management. The dynamic flow of goods and commodities in and out of the city was paralleled with the flow of migrants in search of a better life. The development of the port occurred alongside the growing congestion of the city, as infrastructure struggled to keep pace and a confined territory restricted the availability of land for expansion.

Two fairly detailed surveys by the Department of Social Welfare, in 1947 and 1954, provided an idea of the extent of congestion in Singapore’s central areas. This extract gives a sense of the cramped sleeping arrangements: ‘bunks in passage ways, ... tiered bed lofts ... people sleeping under or over staircases ... in five foot [passage]ways, kitchens and backyards, and other places used for sleeping without enclosures or partitions’. In 1947, the percentage of households using such spaces was 21 per cent in ward one (the harbour area stretching to west Chinatown), 16 per cent in ward two (the rest of Chinatown, including the business district, extending east to Middle Road) and 26 per cent in ward three (comprising areas east of Middle Road, bounded by Serangoon Road and the Kallang River). By 1954, when the second survey was done, the figures had increased to 38 per cent in wards one and two, and had dropped slightly to 25 per cent in ward three. These conditions are described in more detail in Barrington Kaye’s *Upper Nanking Street*, arguably the first urban sociology study attempted in Singapore. Upper Nanking Street was one of the most congested neighbourhoods in Singapore in the 1950s, in the heart of Chinatown. Kaye’s case interviews provide an enduring account of the hardships faced as residents coped with cramped, spartan and often insanitary living conditions, unemployment and ill health.

The 1960s and 1970s were a time of social and physical transformation in Singapore. The city-state had gained its independence, and had a government that was elected and therefore more responsive to the population. The new government put in place a more effective

set of infrastructures, in order to secure the political legitimacy to govern. This period saw, among a number of major national projects, the development of a comprehensive public housing system and plans to decentralise the population, in response to Singapore’s increasingly congested and unsanitary conditions. At the time, the central area described by Barrington Kaye (1,700 acres of land around the Singapore River) housed a population density of about 247,000 persons per square kilometre (640,000 persons per square mile), making it one of the world’s most congested slums.

Starting with the 1958 Master Plan, efforts were made to decentralise the population. This trend continued with subsequent plans, such as the 1971 Ring Concept Plan, based on a ring of development around the water catchment area and linear development along the southern coast. This plan was formulated to provide for a future population of four million (a projection which has been revised continually upwards). High-density residential developments follow the water catchment area and the southern coast and are served by an island-wide system of expressways and a mass rapid transit system.

The public housing development programme took the form of new town development, based on high-rise public housing with supporting amenities such as schools, markets, polyclinics, and recreational and sports facilities. Community centres located in housing estates enhanced the integration of residents from different ethnic groups. The policy of encouraging married children to stay close to their parents was also significant. Thus the integrated development of the new towns both met the daily needs of households and facilitated community life.

The early new towns, such as Toa Payoh and Queenstown, adopted a plot ratio of about 2.8 (i.e. the floor area of the building allowed was 2.8 times the area of land). As the population increased further, taller apartment blocks of up to 30 storeys were built and building densities began to creep upwards, reaching a plot ration of 3.5. More recently, it is not uncommon to have plot ratios above four, while at Duxton, public housing has been built to 50 storeys and a plot ratio of nine.

High residential and buildings densities are needed to accommodate Singapore’s growing population and its expanding economy, ensuring hygienic conditions and decent living spaces for its residents, as well as social and recreational facilities. Such densities, combined with the increased mobility and openness that is typical of today’s global cities, present new challenges to health and well-being in Singapore. Like in the 1960s, when Singapore’s new government initiated a major infrastructural development project in response to poor health and living conditions in its central areas, once again there is a need to integrate the approach to urban planning and management with today’s health challenges: emerging and re-emerging infectious disease and chronic disease.

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## BUILDING HEALTHY CITIES: THE EXPERIENCE AND CHALLENGES FACED BY CHINA

### Bingqin Li

Cities are crucial for China’s economic development. Further urbanisation is one of the key elements of post-central planning reform and is seen as the solution to rural poverty. However, as people concentrate in cities, they face various health challenges. These concern not only the provision of good health care services but also the prevention of disease, improving the quality of living environments and maintaining a healthy lifestyle.

Due to its long history of public health campaigns, there is a strong belief in China in the positive impact of city hygiene on public health. Public health campaigns (PHCs) originated in the 1950s during the Korean War as a means to fight the threat of chemical and biological warfare, and were later institutionalised as a civilian affair and continued regularly until 1966, playing an important role in disease control and health education. They were suspended during the Cultural Revolution, but resumed in 1978 before being transformed into award schemes that encouraged cities to reach certain public hygiene standards in 1989, under the so-called Hygienic City Campaign (HCC).

Cities wishing to become a National Hygienic City have to go through a series of campaigns in order to climb up the ladder, step by step. The campaigns focus on health education, city appearance, environmental sanitation, public hygiene, the cleanliness of drinking water, food hygiene and infectious disease control, among others. Taken together, there are more than 60 indicators to measure and hundreds of targets to meet. Although central government sets the indicators and targets, local governments do not have to follow a prescribed campaign model. Some cities in the less developed western provinces face less pressure from industrialisation and migration and end up spending more on upgrading public

toilets, setting up modern sewers and improving the provision of drinking water, than on improving air quality. Cities have to go through several stages from the local level to the top to become a national level winner, as do districts and rural townships participating in the ‘hygienic district/township’ campaigns.

The key motivation for participating is that officials in winning cities have a good chance of being promoted. Outstanding individual performers may be honoured and even rewarded financially. Participating cities also receive special grants from higher government authorities. It is, therefore, not difficult for organisers to attract willing participants. By the end of 2009, 118 National Hygienic Cities, 28 National Hygienic Urban Neighbourhoods and 377 National Hygienic Counties and Towns had been awarded.

The HCC helps to transform a city in many ways. It motivates a greater investment in basic services and public infrastructure than local governments would otherwise be likely to make and increases public awareness of hygiene issues. In order to win, city authorities need to choreograph wide-ranging support from lower level officials, public and private enterprises and the general public. As a result, a large part of the campaign is about educating the public and getting them involved. If run well, a campaign’s knock-on effect can be stimulating the public to demand better services from the local government in the future. The competitive nature of the campaigns helps to keep local officials accountable and dramatically increases their responsiveness while the campaign is in progress.

Sustaining the benefits can, however, be a major challenge and the structure of the competition helps in this regard. First, it takes many years to become a national level winner: it took Guangzhou 18 years to finally be awarded the title, Xining 10 years, Nanjing 14 years and Yichang 12 years. Second, some of the indicators in the competition concern institutional or governmental changes that are hard to reverse. Third, the National Committee checks a sample of the past winners every three years and cities failing to meet the standards are given a warning or stripped of their title. Finally, new competitions have also been set up, such as the Civilised City Campaign, providing new city-wide challenges to winners of the hygienic city competitions.

In spite of these benefits, and the mechanisms put in place to sustain efforts, the HCC is controversial. A single-minded focus on winning awards can disrupt regular services and have negative impacts upon local businesses. In some cities, such as Kunming and Guangzhou, for example, government officials were required to commit to deliver certain results. Failing to deliver meant they would lose their jobs. This method enhanced the responsiveness of officials but it also meant that they became ruthless in the face of obstacles. In Kunming, for example, officials demanded that all small businesses remove anti-theft protection to make the markets look nicer

but no compensating efforts were made to improve safety. The ensuing tension between the public and policy enforcers culminated in a riot in 2009. In a bid to reduce litter and waste accumulating in public spaces, businesses in Xining and Lanzhou were required to decrease opening hours to align with the guidelines set by policy enforcers.

In addition to receiving grants from higher government authorities, cities also try to raise funds from district governments. Sometimes, businesses, public sector organisations and individuals have been coerced to contribute, through direct financial contribution as well as through providing materials and committing their own time. In order to increase accessibility to public toilets and drinking water, for example, state enterprises in Xining were required to open their facilities to the public and school terms were cut short in order to secure student volunteers for the effort.

As a secondary source of revenue increase, some local governments focused on urban regeneration to improve the city’s appearance. Xining and Kunming wanted to attract more tourists and cities in the Jiangsu province wanted to attract more investment. These efforts create situations where cities might plant grass to quickly increase their green areas, without thinking about the impact on increased water consumption.

Above all, the top-down approach of the HCC tends to invite cheating. Some local governments resort to fraudulent measures in order to make a good impression on inspectors. During their inspection period the city of Jiaozuo in Henan Province temporarily turned many unhygienic restaurants into bookshops or tourist agencies in order to avoid inspection. In another example, some small restaurants in Xining did not open their toilets to customers so that they would remain spotlessly clean, while others stopped offering tissues to customers in order to prevent littering.

Given the drawbacks of the HCC, should it be stopped altogether? There are several reasons why a hygiene campaign of some sort should continue to exist. First, the HCC does lead to increased public awareness, which may make the possibility of the public demanding a better environment and improved hygiene in the future more likely. During campaigns, people use Internet forums to expose the fraudulent practices of the local governments, as well as to show their appreciation of improved cleanliness and new facilities. They were also more outspoken and dissatisfied when standards dropped again after the campaigns. Second, concerns about sustainability may be of second order in comparison to taking action in the first place. Indicators and management style can then be improved in order to avoid creating perverse incentives. However, whether people can rely on government officials to make such improvements themselves is questionable.

It is, however, important to point out that cleanliness is only relevant to some of the health problems faced by China’s

urban residents. In 2009, a health survey was carried out in 589 cities with nearly one million interviewees. The average age of people suffering from high blood pressure, high cholesterol and high blood sugar was found to have dropped from over 50 to just 30 to 40 years. Such results are not just a problem of unaffordable health care, but also reflect dramatic changes in lifestyle. Unhealthy eating habits, long and stressful work, irregular sleeping patterns, over-indulgence in Internet surfing and frequent business banquets, are all possible contributors to urban health problems. The survey shows that the richer a city becomes, the poorer the health profile of the population gets, with Beijing, Shanghai, Guangzhou and Shenzhen faring worse than less prosperous cities.

Influenced by the World Health Organization’s (WHO) ideas about healthy cities, some second-tier Chinese cities, such as Suzhou and Hangzhou, have made an early start in exploring a broader conception of healthy and liveable cities. In 2007, the Ministry of Health set up a task force dedicated to promoting a healthy lifestyle throughout China and a number of cities and urban districts were selected as pilots for ‘Healthy City’ schemes.

As the country becomes increasingly urbanised, health challenges increase. Rapid growth of urban population and unaffordable housing, in particular in megacities, generates poor and overcrowded housing conditions in suburban slums and urban villages. These neighbourhoods do not always receive equal basic services and suffer from poor infrastructure. According to the WHO, the proportion of China’s urban population using shared sanitation has grown from 25 to 30 per cent between 1990 and 2008, while the proportion defecating in the open has risen from 3 to 6 per cent. Such residents are more likely to be affected by infectious diseases, posing major threats to cities.

Changes in lifestyle and environment mean that a broader range of health issues, formerly considered private, are entering the public domain. People are more aware of the problems associated with these issues and are demanding improved services. For example, the need to deal with stress, depression and other mental health problems, especially suicides resulting from poor working conditions and long working hours, has received more attention. Public media have also brought several issues into the spotlight, including infectious disease outbreaks, notably SARS, and various food security cases. Changes in public perception put greater pressure on policy makers to respond, demanding more profound changes in the planning and governance of cities.

These public aspects have much do to with how urban environments are designed and constructed, how urban businesses are operated and how urban people lead their life. In spite of China’s dedicated hygiene campaigns, according to the WHO it has the world’s highest rate of chronic obstructive pulmonary

disease due to the country’s serious environmental pollution. Urban public health campaigns therefore must be about much more than making the city look more attractive. Rather, there needs to be greater determination and concerted effort to tackle the major sources of environmental problems.

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## HIGH URBAN DENSITY AND THE GOAL OF A HEALTHY CITY: THE CASE OF CHONGQING

### Tianqi Huang, Ling Huang and Jianfeng Xu

As an inland city, some 2,253 kilometres (1,400 miles) up the Yangtze river from the sea, Chongqing lacked the access to the most lucrative markets and trading routes that accelerated Shanghai’s evolution as a major city from the Opium War (1840) onwards. With a small concession zone after 1891, Chongqing was not cosmopolitan until 1937–46, when it served as the Nationalist capital, and when its population exceeded 1.7 million by the founding of the People’s Republic in 1949. With this demographic expansion, Chongqing, once known as the ‘City of Mountains and Fog’, became one of the most crowded cities in China, where people lived compactly along steep river banks and narrow lanes. This high density, coupled with a mountainous terrain and limited flat land, set the basic parameters of the challenges faced by Chongqing in trying to build a ‘healthy city’ today. One of five goals set by the municipal government in 2008 is to improve living conditions of Chongqing people.

Like all major cities in China, the basic indicators on health for Chongqing have improved steadily. Average life expectancy of Chongqing residents rose from about 40 years in 1949 to 76 today (lower than Shanghai’s, see ‘Urbanisation and Disease Patterns in Shanghai’ by Youde Guo in this collection), with most of the gain during the era of central planning and state sponsored health care. However, as an index of high residential density, living space per capita remained very low at nearly 4 square metres (13 square feet) by 1980. The post-1980 economic reform did not significantly boost Chongqing’s development until 1997, when it became a direct municipality under the central government. Since the 1990s, Chongqing has followed Hong Kong and Singapore in building high-rise apartments of up to 30 storeys or more with floor area ratios (FAR) of up to 4.0–4.5. This recent and

massive residential construction helped raise the average living space per capita to 31.7 square metres (341 square feet) by 2010, even despite the rapid population growth during that period. This large living space reflects Chongqing’s distinctive spatial make-up among China’s largest cities. While the larger metropolitan region comprises 82,000 square kilometres (31,660 square miles) and 28.9 million people, some 10 million of those residents live in Chongqing’s principal urban area of just 2,700 square kilometres (1,042 square miles), resulting in a much higher density than its vast rural hinterland. While each urban resident enjoys more spacious living, the overall density has increased dramatically with the vertical build-up of residential towers, similar to that of Shanghai. However, to tackle the challenge of high-density urban life to health conditions, Chongqing has pursued more explicit policies than Shanghai.

Of the ‘Five Goals for Chongqing’ unveiled by the municipal government in 2008, three – liveability, reforestation and good health – were intended to create a healthy living environment. To achieve the specific goal of a healthy Chongqing, the government plans to build sport facilities en masse and improve medical services rapidly with a wider coverage of medical insurance (free limited medical service for both the employed and the unemployed) in order to benefit local residents. This medical insurance system is a preliminary and progressive one but without very strong financial backing from the government for the moment. However, the government has committed more aid to the more vulnerable social groups with little or no medical insurance. Included in these policies was the concrete target of adding another year to the current life expectancy by 2012.

Complementary policies included an ambitious tree planting programme, begun in 2010 at a cost of HK\$1.6 billion, the construction of massive new green spaces, a large number of new public parks and clustered urban districts interlaced within the existing topography of mountains and rivers. Another major plan involves building 17 new light-rail and subway lines (three of which are already in operation) in order to improve public transportation and reduce air pollution from growing car traffic, while more pedestrian walkways and ‘healthy footpaths’ have been built in many neighbourhoods. All these efforts to improve residents’ living conditions have won general praise from both the upper and lower classes.

While it will be some time before the intended effects of these policies can materialise in improved general health conditions, they share a prominent focus on liveability, and are backed up by serious financial commitment. They also reflect an official recognition of the inescapable high density in a constrained mountainous and hilly topography, and therefore the importance of large-scale planning and engineering to mitigate its perceived undesirable impact on health. Underpinning this approach is

an aesthetic rationale that a greener city that is more integrated within the natural topography of the surrounding mountains and the two rivers (the Yangtze and Jialing rivers meet at the tip of the peninsula on which Chongqing’s urban core sits) is more beautiful and also healthier. Although beautifying Chongqing through forestation and greening public spaces has enhanced the surface appearance of the city, it has run into some unintended consequences, including rapid real estate construction, with the partial end result of lowering indoor density.

Given Chongqing’s land and topographic constraints, residential real estate development takes shape in large numbers of high-rise apartment towers tightly bunched together on hilltops and along river banks. The monotonous skyline, worsened by the often foggy sky, appears to overshadow the greener and more pleasing cityscape and natural beauty of a mountainous river city. Still, the massive supply of new housing has raised residential living space per capita. However, the profit motive of real estate developers tends to push construction to the high or luxury end of the market, inflating housing prices so that lower-income buyers are priced out of the market. In the northern part of Chongqing city, luxury villa developments with golf courses for the nouveau riche were permitted by the local authorities in spite of a ban from the central government. In response, the current municipal government started an ambitious social housing programme at a cost of roughly UK\$40 billion to make 40 million square metres (431 million square feet) of living space available to low-income residents within three years. Each of these apartments is limited to 60 square metres (646 square feet) and yields 20 square metres (215 square feet) per capita for a family of three. Its huge scope helps keep the indoor density relatively low, even though outdoor density in terms of people–land ratio is relatively high. The first low-rent high-rise housing development in Chongqing, Minxin Jiayuan (Folk Wish Homes), was finished in 2010, where thousands of low-income families have moved, with decent and spacious outdoor environment and facilities.

The rapid increase in housing prices in Chongqing has complicated and compromised government efforts to beautify the city, improve the quality of life and to create significant affordable housing. A brief reference to Hong Kong illustrates the point. About 10 years ago, Hong Kong’s average personal income was 30 times of Chongqing’s, while the former’s housing price was about 50 times higher. The Hong Kong–Chongqing income ratio has since shrunk to 10:1, while the housing differential narrowed to 12:1. The shifts in these ratios mean that Chongqing’s housing has become more expensive relative to income, causing per capita living space to shrink. In the 1990s, many families in Chongqing bought apartments of more than 100 square metres (1076 square feet), but most buyers today have to settle for less than 90 square

metres (969 square feet).

In the compact and rapidly growing large city of Chongqing, there is limited room but greater need for smart planning to achieve the level of density that is conducive to quality of living and health. While this planning can take advantage of the natural beauty of mountains, forests and rivers, it confronts the tough challenge in reconciling with the brutal commercial logic of rapid real estate development and price inflation that is not necessarily compatible with building a healthy city.

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## URBANISATION AND DISEASE PATTERNS IN SHANGHAI

### Youde Guo

Shanghai is in many aspects at the leading edge of China’s urbanisation, modernisation and economic development, factors which have serious consequences for the quality of life and well-being of the city’s 23 million people. With almost 90 per cent of its population living in officially defined urban areas within its municipal boundaries, Shanghai has the highest level of urbanisation among all large cities in China. With a total fertility rate of only 0.89 in 2010, much lower than the widely accepted replacement level of 2.1, Shanghai has the lowest level of fertility among all large Chinese cities and one of the lowest among world cities. In addition, Shanghai’s proportion of older inhabitants (aged 60 and over) made up 22.5 per cent of the overall population in 2009, a figure that is almost double the national average. The ‘greying’ of Shanghai, pre-maturely relative to China’s overall development (getting old before getting rich), is associated with and reflected in the city’s changing pattern of diseases, especially those leading causes of death. Since the composition of diseases has a direct bearing on health and well-being in a dense urban environment, understanding the transition of disease pattern in connection to rapid urban restructuring

in Shanghai provides valuable insights into what we can expect for other large and dense cities in China and beyond.

To address this topic, I confine the period of study to the last ten years for which comparable data are available and which have witnessed continued rapid urban growth and noticeable shifts in the disease pattern. The data pertain to the cause-specific death rates of the top-ten killer diseases and measures of urbanisation, including population density, percentage of non-agriculture population, percentage of service sector output and public urban green space. Using the main findings, I will discuss the effects of urbanisation on population health in general and the pattern of diseases in particular, and highlight policy implications.

During the past decade, Shanghai underwent a dramatic change in its city form and other urban characteristics. With more than 20 million people packed into fixed municipal boundaries, the population density of Shanghai reached 3,030 people per square kilometre in 2009, up by 19.5 per cent from 2000. This indicator rises to 16,000–44,000 people per square kilometre in central Shanghai, making the city one of the most crowded megacities in the world. While this level of human density used to be associated with dense industrial activities, especially in the central city, Shanghai has gradually moved away from manufacturing and has been enlarging its service sector. Over the past two decades it has relocated many of its factories to its outlying areas and neighbouring provinces. As a result, manufacturing as a share of Shanghai’s GDP dropped from 60.1 per cent in 1990 to 41.9 per cent in 2000 and then down to 35.9 per cent in 2009, while the service sector’s percentage of GDP rose from 31.9 to 52.1 and then to 59.4 in 2009.

With the transformation of industry structures, the composition of the population changed greatly. The percentage of non-agricultural population increased from 74.6 per cent in 2000 to 88.3 per cent in 2009. Alongside the demographic and economic restructuring, Shanghai’s government focused on increasing green infrastructure, raising the coverage of urban green spaces in the city from 22.2 per cent in 2000 to 38.1 per cent in 2009. These urban changes may have some effect on health and well-being in Shanghai.

Life expectancy at birth is a general indicator of urban health or health in general. While life expectancy for China doubled from around 35 right after the Communist Revolution of 1949 to about 70 in 1980, the already high life expectancy for Shanghai, relative to the rest of China, rose further through the reform era and again from 73.4 in 1978 to 78.8 in 2000 to then 81.7 in 2009, a figure which was approaching that of western industrialised countries. Beyond life expectancy, the top-ten killer diseases account for more than 90 per cent of all deaths annually in Shanghai. From 2000 to 2009, the top ten-killers were circulation diseases, cancer, respiratory system diseases, damnification and

poisoning, endocrine-immunity-metabolic diseases, digestive system diseases, infectious and parasitic diseases, mental illness, nervous system diseases and genitourinary diseases. While this pattern was quite stable for the last decade, the top three, namely circulation diseases, cancer and respiratory system diseases, caused over three-quarters of all deaths. Cancer-related death per 100,000 rose 16 per cent during the study period, while the death rates of both nervous system diseases and endocrine-immunity-metabolic diseases registered increases of over 60 per cent, and became the most significant of increases among the top-ten killers in the past decade. Both infectious and parasitic diseases and mental illness declined by 30 per cent respectively. Respiratory system disease rate decreased 16.1 per cent during the past decade. It is clear that chronic diseases have replaced infectious and acute diseases to become major causes of death in Shanghai, which is a more similar disease pattern to that of western industrialised countries.

To analyse the direct association between the diseases and measures of urbanisation, specifically density, I have conducted a stepwise regression analysis using limited data and summarise the key findings here (see Table 2). Population density is positively related to the death rates of circulation diseases, cancer and nervous system diseases. While the data did not allow a causal analysis that would include other factors, the evidence suggests that density has something to do with two of the top three killing diseases in Shanghai. To the extent that density reflects the negative effect of a crowded living environment on certain health conditions, the findings point to areas of further research and policy discussion on the mechanisms that transmit the effect of density on critical health outcomes in Shanghai. The analysis also indicates a negative statistical association between the percentage of non-agriculture population and death rates of respiratory system diseases, endocrine-immunity-metabolic diseases and infectious diseases, with the relationship being the strongest for respiratory system diseases. Not being able to control for the potential influence of other factors, it appears that a higher level of industrial activity makes a difference to less people dying from respiratory system diseases. This is consistent with the two parallel trends of more industrialisation and lower death rates from respiratory system diseases in Shanghai over time. The percentage of tertiary industry product of GDP and the percentage of coverage of urban green areas demonstrate mixed effects on some diseases.

As Shanghai has been leading all Chinese cities in building high-rise buildings, creating wealth and raising the standard of living, the challenge of making the city healthier has risen to the fore and will continue to stay high on the policy agenda. In this essay, I have provided a limited empirical assessment of where Shanghai is in becoming a healthier city in terms of its recent disease profile. One thing is clear, however: Shanghai has become similar to western cities in terms

of the same chronic diseases overtaking acute diseases as the leading causes of death. Since there is some evidence that chronic diseases are related to population density and levels of industrial activity in the expected directions, it calls for more systematic research, using better data, to probe the underlying causal connections. This should facilitate a more informed policy discussion on how to build Shanghai up, not only as a wealthy city, but also how to turn it into a healthy one as a model for more balanced urban development.

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## SPATIAL ACCESS TO HEALTH SERVICES IN SHANGHAI

### Yuan Ren

Improving the public health services that are available to all citizens should be pursued as one of main purposes of a strategy of large-scale urbanisation. However, in China, the improvement of health services is of much lower priority than efforts to build factories and transport infrastructure in order to generate and sustain the levels of economic growth that has come to define the country’s hyper-urbanisation. The resulting spatial structure of rapidly growing megacities in China, coupled with its institutional history, creates a distinct relationship between urban density and health care services within and between the core and peripheral areas of cities, including Shanghai.

What follows is an account of the spatial disparity of health care services in Shanghai. In the context of government orchestrated decentralisation, I focus on how two salient features of demographic dynamics – ageing and migration – interact to create a set of challenges to the provision of spatially balanced and adequate health care to all Shanghai residents.

Due to the institutional legacy of urban–rural separation in China that favoured investment and services in cities, urban areas have better health facilities than rural ones. For the same reason, large cities have enjoyed better health care services than small cities and towns. In most Chinese cities, there is a greater concentration of health care facilities in the urban core than on the outskirts and administratively linked rural areas beyond. Take Shanghai, for example. Despite, or perhaps because of, a large population and high density at

its centre, health care service per capita is higher than in the suburban and rural areas. In the Jing’an District, located in downtown Shanghai, there were 559 hospital beds and 317 physicians per square kilometre in 2006, 41 and 53 times higher respectively than Shanghai’s average. In the city centre, the number of hospital beds and physicians per 1,000 people was two to three times the average of the Shanghai municipality and five to six times its suburban areas. The urban core of Shanghai can thus be considered ‘healthier’ than the outlying and rural areas within its municipal boundary, in relation to its greater availability of health care services – one of the most important determinants of urban health.

Since the 1990s, Shanghai has experienced large-scale and accelerated suburbanisation and decentralisation, characterised by the construction of a number of new towns or satellite cities that are supposed to be environmentally friendly, international and rich with commercial and social services. This trend has both facilitated and reflected some spatial dispersal of the central city population. The extension of railways and roads has induced more polycentric urban development, since people living in suburban cities can easily travel to work on public transportation or by the growing number of private cars. Between the fifth national Census taken in 2000 and the sixth Census recently completed in 2010, the population of Shanghai’s urban districts grew only slightly from 6.93 million to 6.99 million. Meanwhile, the population in the suburban districts rose by 70 per cent, from 10.72 million to 17.34 million. Suburban growth was more rapid in Minghang District and Pudong New Area, and most rapid in Songjiang District and Jiading District, where Songjiang New City and Jiading New City are located, whose populations have doubled in ten years.

This accelerated suburban population growth makes the already inferior health facilities and services in those areas even more deficient. It not only lowers the access of people living in these new suburban communities to heath care but also reduces the appeal of these places to central city residents who contemplate moving. This disparity is particularly problematic for the elderly population. While the average proportion of population aged 65 and above in Shanghai was around 10 per cent in 2010, it rises to 16–17 per cent in central urban districts such as Jing’an and Luwan, and drops to 6–7 per cent in suburban districts such as Jiading, Songjiang and Qingpu. The greater concentration of the older population in the central city can be expected, given their higher demand for health care services, among other factors. However, it puts strain on old-age care facilities in the central city, where waiting times for nursing homes can reach several years. In contrast, there are often empty beds at nursing homes in the suburban and rural areas. Given the low standard and conditions of nursing homes in rural areas, the elderly in the central city are reluctant to move to those facilities.

Therefore, building higher quality health care facilities for the old in suburban new cities is an important step in encouraging them, and indeed all age groups, to move.

The continued growth of internal migrant populations in large coastal cities like Shanghai, especially in its outlying areas, poses another challenge to city health care, a key factor in the creation of sustainable urban communities. Due to China’s hukou system and its associated discrimination against migrants accessing public services, migrants do not have the same rights to medical care as local residents. As a result, and even though many migrants have lived in Shanghai for a long time, most of them do not have medical insurance and cannot afford to pay for the relatively high health care service in Shanghai. The non-hukou migrant population who live more than half a year in Shanghai numbers almost 9 million of the estimated 23 million people living permanently in the city. This means there is a huge population living and working in the city that is not able to access equal health care. This disparity creates a major source of potential social discontent, and, over time, a less healthy workforce.

The inequality of public health care services in the megacity of Shanghai has two sources. The first is the unequal geographic distribution of health care resources and facilities between the traditionally favoured central city and the newly developed, but still less serviced, periphery. This disparity has been exasperated by the rapid relocation of central city population to the suburban areas. The solution should be to rebalance the spatial distribution of health care facilities, and to provide high quality health care services in suburban areas, in proportion to population dynamics and shifting density aligned with better planning mechanisms. Second, inequality in health care is based on the unequal rights of different population groups, especially between local residents and migrants, and is also complicated by the issue of class. This raises an urgent need for municipal government to provide universal public health care service to all people, especially for those migrants who have contributed a great deal to Shanghai’s prosperity. Only then can the opportunities of health as a driver for sustainable urban development be fully realised.

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## URBAN RISK AND WELL-BEING IN TOKYO

### Takayuki Kubo

According to UN-HABITAT, over half of the world’s population lives in urban areas, a number that will increase to nearly 70 per cent by 2050. Meanwhile, urban areas occupy just 5 per cent of the earth. Although high urban density can bring many benefits, it should not be forgotten that high population densities, and the resultant concentration of wealth in tiny spots around the globe, increases risk exposure to these places. In recent years, natural disasters have increased both in severity and frequency related to climate change, and cities not traditionally associated with such disasters are now facing increased risk. Simultaneously, because of densities of infrastructure that accompany rapid urbanisation, the complexity of disasters, such as the combination of floods, power plant or factory accidents and hazards, can be triggered by the same natural disaster. The application of new risk-management policies seems to be an urgent matter as cities accelerate their growth, and given the demographic momentum of an urban transition.

The Tokyo Metropolitan Area, composed of the capital city, Tokyo, and the surrounding three prefectures, is known as the largest metropolitan area in the world, with a population of 35 million and a GDP of US\$1,479 billion. Although the historical cityscape was mostly demolished during World War II, the fundamental structure of Tokyo remained with its unique urban form centralised around the Imperial Palace. Modern infrastructure, such as railways and motorways, were transferred onto this urban form, and it is because of these systems that a huge number of people can live, move and work in Tokyo. Life expectancy at birth for males is 73 years and for females 78 years, which are among the highest figures in the world. The number of murders in Tokyo per million people in 2010 was 7.7, a very low rate among other global cities. With these facts in mind, Tokyo’s well-being could be measured as one of the highest in the world. Meanwhile, the city has been facing severe disasters like the Great Kanto earthquake that struck in 1923, as well as more routine typhoons and floods. There have been significant losses caused by these disasters; however, because of their consistency, risk-management policies have accumulated over time.

The complex disaster on 11 March 2011 caused by the earthquake in east Japan, and subsequently the tsunami and damage to the Fukushima nuclear plant, also had an effect on the city. In Tokyo, 400 kilometres (248 miles) away from the M9 earthquake, the shock was rated a 5+ out of a total of 7 under the measurement system used in Japan. And yet, only ten houses collapsed and seven people died. This seemingly limited amount of damage

points to the massive set of improvements in the seismic performance of buildings that were put into place following the Great Hanshin-Awaji earthquake in 1995. Also, because of the ‘my-com-meter’, a system introduced post-1995 to shut down residential gas supply at the first sense of an earthquake, there were no fires in the city. Bridges, motorways and railways have also had considerable reinforcement over the past decade, and so were not seriously damaged. Tokyo in 2011 offers us some visible success of several risk-management policies that have been refined over the past century, and specifically within the past 15 years.

However, while no major infrastructural damage or large numbers of deaths occurred, Tokyoites still faced serious inconveniences, particularly those who rely on the highly developed urban infrastructure in the centre of the city.

The earthquake struck around 3pm. Since there was little damage to the city, people assumed that they would be able to get home as usual. Tokyo has one of the most sophisticated train systems in the world, moving some ten million people daily. However, following the quake, all the lines were systematically shut down in order to monitor for any possible damage. Some 40 per cent of the lines, mostly subways, recovered within the day. But the rest were kept shut until the following day. This unprecedented shut-down saw the city’s streets overflowing with people. Major terminals, such as Tokyo Station and Shinjuku Station, which usually accommodate more than 1.5 million passengers every day, closed. Consequently, people had to take what transport they could, with many walking for several hours back to their homes. Some bought and rode bicycles, others were picked up by car by a family member, still more went back to the office, or stayed at the refugee centres that were set up in the city’s public facilities and shopping centres. While things remained calm and organised, the lines of walking people did not disappear until the early morning. This experience made explicit the risks of a Metropolitan Region dependant on daily long-distance commuting.

The other inconvenience Tokyo faced was as a result of the impact of the tsunami on the nuclear plant at Fukushima. The plant shut down, creating electricity shortages, and resulting in reduced train frequency on each transit line and the closure of barrier-free transit infrastructure such as escalators and lifts. Because of these events, the mobility of elderly people and families with small children was significantly reduced. In response, the government ordered a reduction in domestic electricity use, which had the result of, among other things, decreased temperature control. Furthermore, because of the disaster, people began to stock up on supplies. In particular, people rushed to purchase bottled water, even though the official radiation levels in Tokyo’s water supply showed no signs of being harmful to humans. As a result there was less clean water available to those most vulnerable to radiation poisoning, such as infants.

So, even though the infrastructure of the city survived, the social and economic materiality of city living was proven to be fragile, and with mobility and health vulnerabilities increased among the elderly and the young, many Tokyoites lost confidence in a city that traditionally has a very high quality of life.

Over the next few years, urban practitioners, disaster-management experts and risk-assessment professionals will actively be responding to the lessons learnt from the events of March 2011. For example, one outlier was Roppongi Hills, one of the recent major urban development projects in the heart of Tokyo. It was not affected by the disaster at all. During the shut-down of the city’s public infrastructures, it was able to offer support to people who were not able to go home by providing ample stocks of food, water and blankets. Shocks to the area’s high-rise buildings, such as the Mori Tower, were reduced by ‘Dumping Devices’, which meant that operations were back to usual the following day. Because the complex had its own LNG (liquefied natural gas) plant, it was free from the ensuing electricity shortage and was even able to provide electricity to the surrounding areas.

While Roppongi Hills can provide several best practice lessons, and is the largest private based development in Tokyo, it is a relatively small area compared to the whole Metropolitan Region. However, risk-management policies are now developing in order to implement the lessons learnt here, to Tokyo as a whole. Forecasts show that there is a 70 per cent chance of a great earthquake occurring in or near Tokyo within the next 30 years; therefore, just like after the earthquake in 1995, urban systems need to continue to implement risk-management policies.

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## RETHINKING AFRICAN URBANISM FROM THE SLUM

### Edgar Pieterse

Amidst the lingering global economic downturn and the dramatic rise of the emerging economies, Africa is increasingly being dragged into the globalisation narrative. The influential business think tank, McKinsey Global Institute, demonstrates that over the past decade Africa’s average GDP growth rates have been climbing and inching closer to the levels commonly seen in South-East Asia until the global recession in 2008. They also underscore that between 2004 and 2008, return on investment in Africa was higher than in any other region in the world. In their bullish outlook, this

signals the beginning of a long-term trend, which they evocatively brand as ‘lions on the move’. The other notable business think tank, Monitor Group, place cities at the centre of this optimistic storyline: ‘the economic future of SSA [sub-Saharan Africa] is more connected to the success of its cities, and the competitive clusters based there, than to its nation states. Cities today generate most of the subcontinent’s wealth, with many thriving despite obvious challenges. Rapid urbanisation turbocharges economic growth and diversification, enhances productivity, increases employment opportunities, and improves standards of living.’ Tellingly, both of these institutions and the panoply of multilateral development agencies agree that the one binding constraint on this pent-up potential is Africa’s massive infrastructure deficit across all fronts.

The World Bank produced an important body of work in 2010 that, for the first time, provides a comprehensive overview of the scale and dimensions of the infrastructural deficit across Africa, broken down to reflect both urban and rural aspects. The infrastructure diagnostic report pegs the overall infrastructure deficit at US\$93 billion per annum. This is the level of annual investment required to address the current backlogs and cope with future growth. According to the same report, presently the level of annual investment peaks around US\$45 billion per annum, suggesting a massive shortfall, which of course means that the scale of future investment costs continue to climb well above the US\$93 billion estimate. The following table from the diagnostic report provides a high-level summary of the sectoral composition of the infrastructural deficit, without disaggregating it between urban and rural areas.

It is important to read this table in relation to the dramatic prevalence of slum living conditions across most African cities, which, according to the last State of African Cities Report, stands at 62 per cent. Moreover, the 2008 State of the World’s Cities Report demonstrated that not only does Africa have a much higher slum prevalence level (62 per cent), but also that the depth of deprivation is also much more acute compared to South-East Asia and Latin America. In other words, of the four dimensions of slum living – overcrowding, informal housing, insecure tenure and lack of access to water and sanitation – 37 per cent of slums in Africa have 3 to 4 of these conditions, compared to 5 per cent in southern Asia and 8 per cent in Latin America. One of the central drivers of poor health and well-being is of course the absence of water and sanitation

| Infrastructure sector | Capital expenditure | Operation and maintenance | Total spending in US\$ |
|-----------------------|---------------------|---------------------------|------------------------|
| ICT                   | 7.0                 | 2.0                       | 9.0                    |
| Irrigation            | 2.9                 | 0.6                       | 3.4                    |
| Power                 | 26.7                | 14.1                      | 40.8                   |
| Transport             | 8.8                 | 9.4                       | 18.2                   |
| Water and sanitation  | 14.9                | 33.0                      | 47.9                   |
| Total                 | 60.4                | 33.0                      | 93.3                   |

Table 1. Annual Infrastructure Investment requirements for Sub-Saharan Africa

along with overcrowding and precarious living environments. However, apart from recognising the low levels of access to basic services such was electricity, water and sanitation, it is also stark that where these services are provided, they barely reach the two top quintiles of the population. The bottom 60 per cent is simply not reached, because the modalities of finance and delivery are driven by the imperatives of cost-recovery and the prioritisation of economically important spaces: nodes of commerce and movement of goods and services and the residential estates that house the middle classes and elites. Tellingly, this approach is characterised and lamented by the WHO as evidence of, fundamentally, the unjust and unequal distribution of resources, wealth, information and power in these societies.

There is a particular view of the world, cities and the role of the market that underpins a growing confidence that Africa’s cities are finally being recognised as critical anchors for the overall economic renaissance. At the risk of crudifying a number of complex processes and perspectives, my stylised account would suggest a new urban policy dogma that goes something like this: if Africa is to take its place in the global economy, it must urgently address the critical infrastructure deficits in energy, connective infrastructure (roads, rail, ports, airports, ICT) and water. These fundamental economic infrastructures can then catalyse larger processes of economic development that will raise land values and the asset base of local authorities, which can then recoup their investment through taxation, which, along with national transfers, can be used to address the massive problems associated with slum urbanism. However, this virtuous loop depends on appropriate regulatory reform, which includes, inter alia, decentralisation of built environment functions and fiscal powers to cities, easing the cost of doing business to attract more foreign direct investment, and suitably secure and networked residential stock for the middle classes and entrepreneurs that will drive these new investments and businesses. The resulting revenue that stems from creating this ‘enabling environment’ for economic development can then be deployed to fund and progressively expand a sensible slum upgrading programme, which fosters the connection between enhancing aggregate economic growth and raising everyone’s living standards by providing access to essential services in the most disconnected areas of the city.

Within the logic of this mainstream policy mindset, the primary obstacles to the realisation of this agenda are foremost a lack of political will, which can be traced to a reluctance to devolve powers to cities, and a deeper underlying fear that cities will in due course breed political opposition. Consequently, political elites tend to ignore the pressing importance of rapid urbanisation and its attendant demands for substantial infrastructural investments. As a result, in many official policy documents there is tenor of frustration and desperation with most African governments which simply fail to do the bare minimum to come to terms with the material realities of urbanisation and its economic, social, technological and political imperatives. There is clearly some truth to this line of analysis. However, my contention is that the new urban policy canon for Africa is undermined by a number of more fundamental conceptual problems.

There is very little acknowledgement that with the low economic base, combined with massive demographic expansion over the next forty years or so, large-scale structural disconnect from the formal economy, and already very high levels of income inequality, slum living will remain a defining feature for the foreseeable future. In the mainstream urban policy approach there is seemingly little appreciation for the cumulative consequences of poverty and ill health if slum living conditions are allowed to remain as high as they are. In fact, there is little evidence that the overall negative economic impacts as large-scale poverty exacerbates social conflict and undermines economic productivity. The continuation of slum urbanism as the dominant material condition in African cities is informed by fascinating and grim forecasts in African Futures 2050, published by the Pardee Centre and the Institute of Security Studies. According to the study, ‘Over the entire half-century [1960–2010], Eastern Africa gained only about \$150 per capita and Western Africa about \$130 per capita, while GDP per capita in Central Africa has remained almost unchanged since 1960.’ This is an unfathomable accomplishment of economic, political and social failure. Looking ahead to 2052, an even larger and more dramatic process of systemic exclusion will potentially eclipse this inventory of failure across most African countries. The income poverty trend lines and projected GDP per capita shifts that stem from this work are instructive.

It is important to understand that both the East and West African regions will more than double their populations over this period, from roughly 300 million in 2010, to 700 million by 2050, respectively. Keeping this prospect of interminable poverty in mind, it is sobering to remember that presently slum prevalence is almost 62 per cent. The forecast data and speculation seem to suggest that Africa will double its population by 2052, moving from 1.1 billion in 2011 to 2.3 billion; and an urban share of 40 per cent in 2011 to one approaching 60 per cent by 2052.

A reasonable conclusion to arrive at where these trend lines meet is that urban poverty, ill health and associated slum urbanism will continue to be a major feature of city life for at least the next four decades. It is difficult to place store in the policy thinking of the World Bank, and various other multilateral development agencies, as far-reaching enough to effect a dramatic departure from current patterns. There seems to be an unshakeable, if even irrational, belief that rational government with sufficient commitment can get a handle on the problem and systematically introduce effective planning, regulation and management to ensure the virtuous circle of development, in the parlance of the Africa Infrastructure report. Such a misplaced perspective fails to engage with the cumulative effects of informalised economies, settlements, social-cultural systems and political cultures. Figure 3 offers a stylised account of the fundamental logic that drives urban development patterns in most sub-Saharan African cities in order to signal the systemic nature of informal urbanism.

Moreover, the World Bank perspective definitely fails to engage with the robust analysis of the WHO that suggests that the persistence of slum living and associated poor health conditions and outcomes can be traced to the distribution of power in cities and society at large. It is relevant to quote the major report of the Commission on Social Determinants of Health established by the WHO at some length: ‘The poor health of the poor ... are caused by the unequal distribution of power, income, goods, and services, globally and nationally, the consequent unfairness in the immediate, visible circumstances of people’s lives – their access to health care, schools, and education, their conditions of work and leisure, their homes, communities, towns, or cities – and their chances of leading a flourishing life. This unequal distribution of health-damaging experiences is not in any sense a “natural” phenomenon but is the result of a toxic combination of poor social policies and programmes, unfair economic arrangements, and bad politics. Together, the structural determinants and conditions of daily life constitute the social determinants of health and are responsible for a major part of health inequities between and within countries.’ Interestingly enough, in proposing a way out of this, the Commission falls back on the idea of a strong, independent, capable, and one could argue, generous state. There is surprisingly little in the work of the Commission on what is to be done when this kind of developmental and interventionist state is simply unlikely for a variety of historical and material reasons.

In placing most of the burden for improving health outcomes on the shoulders of the state, admittedly working in partnership with civil society and the private sector, there is an insufficient grappling with central and vital roles of various categories of civil society organisation in shifting the political economy of slum urbanism at the level of the street, the household and the intimate

neighbourhood scale. In my reading the only way in which the vicious circle can be interrupted, deconstructed and remade into a new urban logic is if civil society organisations, rooted in the interest of the urban poor, can articulate an effective package of economic, governance and political-cultural reforms, rooted in a plurality of local experiments and dogged mobilisations. At this point it is important to steer clear, even if for a while, from the morally driven discourses on participatory development and virtuous civil society organisations. In fact, it is in thinking through a new imaginary for urban civil society that the work of urban theorists such Asef Bayat, Ananya Roy, AbdouMaliq Simone and Mark Swilling comes into its own.

The first step in breaking through to a compelling theory on African and Southern urbanism is to develop a deep theoretical and philosophical appreciation for the unique lived dynamics of an urban logic and patterning that continues to grow and adapt, despite the absence of the conventional underpinnings of industrial modernism. This enterprise is large, complex and demanding in its own right and deserves dedicated exponents. This larger enterprise of reimagining urbanism is an entry point, a gateway onto understanding alternative organising logics and energies. The fundamental intellectual, policy, design and artistic challenge confronting (African) urbanists is to draw out the logics, emergent dynamics and aesthetics of everyday urbanisms, and connect those with normative imperatives to squarely address the dramatic injustices that I touched upon before. By force, this will require a savvy understanding of dominant market logics in the shaping of cities, but this is merely to understand and pinpoint an alternative positioning.

This new, different, alternative vantage point must be the adaptive livelihood imperatives of poor households. Building on the rich work of John Friedmann on whole economies, circa 1992, it is possible to layer and articulate three economic facts of life that cut across poor settlements: social economies, informal economies and formal economic systems. These are not iron-clad categories, for they are mutually constitutive and dependent, but also overlapping in the routine reproduction of settlements and household survival strategies. Given the predominance of unemployment and informality, the most urgent and critical alternative vision we need is to systematise our thinking on the nature and function of social economies.

An agenda for the role of social economies can be organised around a large-scale community focused public works programme trained on the following: the care economy, including localised health and education support services; ecological system services as manifest in green and blue infrastructures; cultural and artistic services for the youth and children; and classic public works programmes centred on road building, school building, and continuous maintenance and repairs of

these institutions along with clinics, early childhood centres, transport interchanges, and so forth. An example from South Africa may be apposite. Among the youth demographic, more than 50 per cent cannot access formal jobs, even though they may have completed primary and a portion of secondary schooling. At the same time, South Africa has the largest HIV/Aids prevalence rate in the world. In order to contain and manage the scale of the Aids pandemic, it is vital that a national network of home-based care workers be established. These care economy service workers need not necessarily have a formal medical training but must work with affected households to ensure that anti-retrovirals are taken in conjunction with sufficient nutritional intake, as well as various kinds of psychological support to help sufferers and their families deal with stigma and shame. Since nutrition is such an important aspect of these localised support systems, these community workers can also serve as linchpins with various food security initiatives that combine the imperatives of urban agriculture, with restoring green infrastructures and enrolling children and older persons in various handicrafts that can restore connections with soil and effectively, hope.

For such an initiative to flourish it requires two vital resources: committed activists to take ownership of these programmes at a neighbourhood level, and taking responsibility for embedding such programmes within a community driven spatial vision that in turn is translated into specific fine-grained interventions that will gradually and determinedly improve living and economic environments, especially collective public spaces that flow with and from public transport arteries. Such dynamics of course assume a generalised awareness about the importance of spatial and design literacy refracted through local idioms, sensibilities and desires. The second ingredient is an institutional context that can facilitate systematic maturation of adaptive systems and projects, which in turn is the basis for scaling up social processes and institutions that can transform the quality of life and aspiration in these seemingly marginal and hopeless settlements.

On this point I concur with Arjun Appadurai and Marty Chen that the social technologies of slum movements, street vendors, waste pickers and so on, offer vital clues about alternative organisation and governance systems. These institutional innovations are vital to articulate the interests of the urban poor into the heart of global, national and city-level boardrooms of power, where the traditional calculations about urban growth and investment are unreflexively enacted. At the heart of these new generation social movements is the idea of a ‘social-cultural operating system’ and technology that addresses the profound material and economic needs of the urban poor through a strategy premised on empowerment through collective action. However, against a backdrop of long-term political and market failure, an ethnic

and sensibility of autonomy accompany their approach. Nothing is expected from the state. Nothing is anticipated from the formal private market. Instead, residents club together in various assemblages to try to make their minimal incomes stretch further by leveraging each other’s support, intelligence and labour to gradually but systematically move everyone forward. At the core of the intelligence system is a capacity for cannibalising, subverting, appropriating and recasting the resources and expectations of the formal city of government regulation and private ownership.

In closing, my central thesis is that the future of African urbanism will be shaped by the logics of official outlooks and resources that drive large-scale economic infrastructural investments and generally reproduce the predominant inequalities that mark our cities. Our cities will also be shaped by the routine actions of the urban majorities that continue to be excluded and ignored in the analytical and risk registers of powerful actors. However, as the century unfolds, and new kinds of social movements refine their social technologies, combined with the benefits of cheap digital technologies mediated by mobile telephony, and enact and articulate their spatial visions for their settlements – the real city – we will see incredibly dynamic, contested and surprising urbanisms emerge. I have no doubt that the street, the slum, the waste dump, the taxi rank, the mosque and church will become the catalysts of an unanticipated African urbanism. So, let’s pay attention in our quest to better understand the determinants and drivers of well-being in the heart of the city – the slum.

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## THE AFRICAN CENTRE FOR CITIES’ HEALTHY CITIES CITYLAB: UNDERSTANDING URBAN HEALTH IN THE GLOBAL SOUTH

### Warren Smit and Vanessa Watson

Like most other cities of the global South, Cape Town’s 3.7 million people live in a juxtaposition of wealth and poverty, of formality and informality. Cape Town’s levels of inequality are among the highest in the world, with a Gini coefficient higher than any other non-South African city. Almost 40 per cent of households are classified as poor, which translates into insufficient income and access to basic

necessities such as food and shelter. As in other cities of the global South, slums are the most tangible manifestation of poverty and inequality in Cape Town, with an estimated 280,000 households living in informal dwellings. Cape Town’s inequality and poverty is also reflected in its high burden of disease and high levels of health inequity. The most recent age-standardised mortality rate for Cape Town is 1,011 per 100,000 people. This is considerably higher than in most cities in the global North; for example it is 60 per cent higher than the latest mortality rate for New York City. Health indicators also vary enormously between health districts; for example, the mortality rate for communicable diseases is about 5 times higher in the Khayelitsha Health District than in the Southern Peninsula Health District (550 deaths per 100,000 people per year versus 112).

The burden of disease in Cape Town and other South African cities is particularly complex, and, as such, is known as a ‘quadruple burden of disease’, which consists of:

- Communicable diseases, closely linked to poverty, such as tuberculosis and diarrhoea (which are both in the top-ten causes of premature mortality in Cape Town), continue at high levels. Many of these diseases are linked to overcrowding, inadequate shelter, inadequate access to basic services and inadequate access to affordable and healthy food;
- HIV/AIDS, which is the leading cause of premature mortality in Cape Town;
- Chronic diseases of lifestyle, such as diabetes mellitus and ischaemic heart disease (which are both in the top-ten causes of premature mortality in Cape Town), are growing rapidly. These are linked to changes in lifestyle associated with rural-urban migration as well as the transition of some households to more affluent lifestyles. These transitions result in more sedentary lifestyles, growing obesity and increased risk of non-communicable diseases;
- Injuries. Cape Town has particularly high levels of murder and traffic accidents, which are the second and fourth most frequent causes respectively of premature mortality in Cape Town.

Improving the health and well-being of residents of Cape Town is a challenge. The limited health data that are available are out of date and difficult for policy makers to engage with. The high levels of political contestation in Cape Town have tended towards policy makers focusing on the short term and on tangible forms of delivery such as housing and infrastructure.

Cape Town and other South African cities are undergoing large-scale state-driven transformation through national programmes for the provision of low-income housing, infrastructure and the renewal of low-income residential areas. Improving health is not an explicit objective in any of these programmes and

evaluations of some interventions suggest that they can sometimes have a negative impact on households. An ongoing illustration is where relocation to the urban periphery results in the disruption of livelihood strategies and social support networks, with very negative impacts on the health and well-being of residents. For example, the relocation of residents from a well-located informal settlement in Langa, close to central Cape Town, to a relocation area in Delft, about 15 kilometres (9 miles) away, resulted in 20 per cent of households losing a source of income, and up to a five-fold increase in monthly transport costs for those who retained their jobs. While there are exceptions, many new housing projects still tend to provide sterile living environments that are not conducive to mental health or to safe outdoor activity, both in terms of aesthetic appeal and protection from hazards, such as traffic, crime and flooding. It is therefore of crucial importance that we have a better understanding of how the physical urban environment influences health and well-being, so that we can begin to create cities that are more conducive to the health and well-being of all residents.

Literature on the relationship between the physical urban environment and health suggests a number of important linkages, and possible interventions, that can improve health and well-being. These linkages that potentially have implications for interventions in the built environment and the design and layout of new housing areas include:

- The provision and design of housing and infrastructure. Improving housing conditions and access to services by, for example, slum upgrading programmes can improve health and well-being in multiple ways;
- The food environment. For example, the nature and location of food outlets can influence diet and nutrition, and the location and nature of spaces for urban agriculture can also be important;
- Appropriate planning layouts. The design of streets and public spaces can create urban environments that are safer from violent crime and traffic accidents, while access to green space can have a positive impact on mental health;
- Design and physical activity. Research suggests that certain types of built environments are more conducive to physical activity like walking, cycling and recreation, and can potentially result in improved health outcomes.

However, the existing bodies of knowledge on the relationship between human health and the physical urban environment are overwhelmingly based on empirical work undertaken in the global North, and the concepts of ‘health’ and ‘the urban’ that underpin this body of knowledge are also derived largely from the particular historical and cultural contexts of the global North. The many manuals on how to create healthy urban environments are therefore of limited use in cities such as Cape Town, where

contextual realities are often very different to those in the global North, and where many of the underlying assumptions do not necessarily apply.

In response to this partial disjuncture between our contextual realities and the bodies of knowledge on the relationship between human health and the physical urban environment, the African Centre for Cities at the University of Cape Town established its Healthy Cities CityLab programme to bring researchers from different disciplines at the University of Cape Town together in a long-term interdisciplinary applied research programme on the relationship between the physical urban environment and health and well-being in Cape Town. The Healthy Cities CityLab is one of a number of the African Centre for Cities’ CityLabs, which stimulate policy relevant research, and researcher-practitioner engagement, on various key challenges facing Cape Town.

The key components of the first phase of the research programme include:

- Undertaking body-mapping workshops in different types of neighbourhoods, such as informal settlements and new housing projects, to determine grassroots perceptions of health and well-being;
- Undertaking an analysis of current key institutional structures, policies and practices that relate to urban health in Cape Town, using interviews and documentation;
- Engaging with policy makers and practitioners in order to explore ways of incorporating explicit health and well-being objectives into policy and implementation processes. This research programme is ongoing, but there are a number of key issues which have emerged thus far.

First, many of the implicit assumptions about what an ‘urban environment’ is are integrally rooted in the western modernist conception of cities. For example, instruments for measuring ‘walkability’ assume that there are clearly defined streets, plots or dwelling units and land uses, and that there are clear separations between urban and rural, residential and commercial, and public and private. African urbanism, on the other hand, is characterised by informality and complexity and the lack of neat separations. In the informal settlements found in African cities, for example, there are no clearly defined streets and no clear separations between vehicle space and pedestrian space, between public and private space, and between land uses; residential dwellings are often also the site of home-based enterprises. Similarly, plots and dwelling units are not clearly defined and even the idea of the ‘household’ can be fairly fluid, with extended families spread across urban and rural homes and with frequent movement between them. All of this can make the relationship between residents and their neighbourhood environment far more complex than in the conventional conception of the western modern city. The main implication of

this is that some of the tools relied on to create healthier urban environments in cities of the global North, such as land-use zoning schemes, will have only a limited effect in cities of the global South, where large segments of cities fall outside the ambit of formal regulations. In Cape Town and other cities of the global South there needs to be more emphasis on guiding the physical creation and management of the urban environment through participatory processes that involve both formal and informal structures.

Second, much of the body of knowledge on the relationship between the urban environment and health rests on an underlying implicit assumption about choice and the availability of alternative options. In contexts such as Cape Town, with high levels of poverty and inequality, and with entrenched socio-spatial segregation and distorted property markets that do not function in most of the city, these assumptions about choice in terms of where to live and choice of lifestyle do not necessarily hold. The implication of this is that the health care promotion programmes that try to change the lifestyles of residents (for example, physical activity and diet) that have been implemented in many cities of the global North may be less effective in cities of the global South. Given the constraints on freedom of choice in many cities of the global South, physical interventions, such as creating safer streets and public spaces and creating healthier food markets and suitable spaces for urban agriculture, would seem to be essential preconditions for health promotion programmes.

Third, as is the case with most other cities of the global South, available health data on Cape Town is fragmented, out of date and often cannot be disaggregated to fine-grained scales. This makes it difficult for policy makers to recognise urban health issues as a priority, and makes it difficult to monitor the health impact of interventions in the urban environment. Cheap and effective methodologies for the collection, analysis and monitoring of relevant urban health data need to be explored.

Creating healthier urban environments is primarily about governance, politics and decision making. It is crucial to ensure that policy makers are aware of key health issues, such as health inequity levels, and how the physical urban environment contributes to this, and how interventions that would not necessarily involve more expenditure, just differently distributed, can contribute to improving health and well-being for all.

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## URBAN DEVELOPMENT IN MAPUTO: STRATEGIC ACTION PLANNING ON A TIGHT BUDGET

### Jørgen Eskemose Andersen and Paul Jenkins

Maputo is the capital of Mozambique, and, together with neighbouring Matola, the city conurbation currently has some 2.5 million inhabitants and is projected to grow to more than 4 million by 2025. It is one of the 15 largest urban areas in sub-Saharan Africa and, like other cities in the region, it is expanding beyond its formal boundaries and likely has a substantially higher population than the official figures suggest. Much of this population lives in informal or unplanned settlements, located in areas prone to floods or erosion, along motorways and railway lines or beside polluting industries. The health implications of these conditions are detrimental.

But unplanned urban sprawl was not always an issue in Mozambique. A programme from the 1980s, ‘Strategic Action Planning’, used land redistribution to control housing demand, curb unplanned urban expansion and, in so doing, created desirable and equitable urban form. Thousands of plots were provided by the new local authority to citizens regardless of income. This reallocation of land for urban development had a substantial impact on metropolitan growth patterns and resulted in a far different experience than that of many other African cities that experienced unplanned, explosive urban growth. Assessing urban development and planning in Maputo over the past two decades leaves no doubt that the organised land division pioneered in the 1980s and the moderate densities which resulted have contributed to improved health in these areas. This suggests that physical planning can have an impact on health – if it is the right sort – and that it can be achieved with low budgets, if accompanied by political will and strategic vision.

**MANAGING RAPID URBAN EXPANSION IN MAPUTO TODAY**
Back in the twenty-first century, rapid urban expansion continues, but this time outside of Maputo’s official boundaries. In recent years, international agencies, notably UN-HABITAT through its Cities without Slums initiative, have once again refocused their attentions on slum upgrading projects, rather than on curbing unplanned urban expansion. Rapid urban expansion continued through the 1990s up until the present day. Like so many other ‘developing countries’ with a limited urban budget, the national and local governments find themselves in a state of never-ending upgrades, with little political will or funding to prevent sprawl in the first place. Recent pilot slum upgrading projects showed only marginal positive impacts given the momentum of urban expansion underway, both through the densification of inner-city areas and through the urbanisation of new land on the periphery.

**WHY AND HOW STRATEGIC ACTION PLANNING EMERGED IN MAPUTO**

In many African countries, colonial governments supplied plots for self-help housing. The Portuguese government, however, ignored this in Mozambique until the late 1960s, when the battle for independence heated up. With independence, accelerated in-migration to Maputo initially took place without any type of formal housing supply to meet increasing demand. People took advantage of the relaxed authority after years of government control, and unplanned and informal development began to mushroom, as it did in much of the ‘developing world’. Although post-

independence Mozambique had hardly any qualified architects and planners and urban development was not a priority of the new government, none the less an urban development team was built up within the Greater Maputo city council from 1980 onwards.

As in other parts of Africa, these professionals subscribed to the dominant international strategies of the time like organised ‘self-help’ housing and ‘sites and services’ schemes. However, in Maputo severely constrained local budgets were compensated by nationalised land, and hence a strategic programme of land distribution was developed. The strategy was to get ahead of urbanisation by focusing on proactive land control, thus permitting the consolidation of urban development to happen over time through actual demand. This approach resulted from a specific decision not to continue with the relatively costly urban upgrading pilot project, which the national government and the UN had implemented in the immediately preceding period (1977–9).

The Strategic Action Planning programme managed to provide approximately 12,000 plots, organised in neighbourhood clusters with land reserved for roads, schools, health care posts and recreation, over a six-year period from 1981 onwards. At the time, approximately 300,000 inhabitants lived in unplanned settlements around the formal central urban core, while the new plots had a planned capacity of just 60,000 people. The layouts were simple, motivated by the need for fast demarcation and the limited technical capacity within the municipal authorities. A key accompanying element was land-use control and construction advice provided through an extension service of basically trained technicians, or ‘bare-foot planners’, as well as a subsidised basic sanitation programme aimed at improving health conditions, which eventually became a UN-HABITAT Best Practice.

The experiences of Maputo show that it is time to reconsider the merits of planning approaches that actually work in producing the liveable and healthier urban environments that residents aspire to, rather than attempt to realise the unachievable norms of what governments, private interests and global institutions think are appropriate. This is not based on a romantic attitude towards self-help and informal settlements as exotic urban environments, but rather a pragmatic recognition of a form of emergent endogenous urbanism. Such a form of urbanism suggests a different modernity. While Mozambican urban residents do aspire to some of the forms of modernity that are planned and designed by architects, their aspirations are embedded in context, unlike most of the formal plans

government to sub-divide plots formally, today plots are increasingly provided by small and medium informal suppliers, typically long-term residents claiming traditional land rights. These residents subdivide plots in a similar way as was pioneered by the state in the 1980s. Maputo’s pioneering Strategic Action Planning approach now continues as a cultural model within society, with many poor and better-off residents seeing the original master plan, thirty years later, as an ideal urban form, but with one major difference. A shift from public to private providers of land distribution highlights an unwillingness to provide land for public open spaces or spaces for social amenities such as schools and health clinics. No private developer sees any interest in setting aside land that cannot be immediately capitalised.

In addition, it has become much easier for private interests to dominate the needs and rights of existing residents of informal settlements, especially in cases where settlements are located on prime land. On top of the direct and quite hazardous living conditions facing residents daily, the legal right to hold the land where they often have lived over generations may be under threat. As fewer and fewer sites become available for development in central locations of Maputo, the informal areas bordering the city have come now under pressure, and developers are increasingly buying out local residents at prices way below the market value. This development is apparently being welcomed by the city authorities, which, in one case, shelved a project developed by the Faculty of Architecture in Maputo based on participatory and inclusive approaches. An alternative plan engaging the private sector envisages demolishing all of the houses to give way for commercial development, condominiums and social housing. The private sector will buy out the informal settlers and over time fulfil the plan now in the process of being approved. The residents will be pushed to the periphery or end up in other informal settlements in severely overcrowded conditions. However, local resistance is building up and eventually the implementation of the plan may run into difficulties.

**TOWARDS AN URBANISM FROM BELOW**

The experiences of Maputo show that it is time to reconsider the merits of planning approaches that actually work in producing the liveable and healthier urban environments that residents aspire to, rather than attempt to realise the unachievable norms of what governments, private interests and global institutions think are appropriate. This is not based on a romantic attitude towards self-help and informal settlements as exotic urban environments, but rather a pragmatic recognition of a form of emergent endogenous urbanism. Such a form of urbanism suggests a different modernity. While Mozambican urban residents do aspire to some of the forms of modernity that are planned and designed by architects, their aspirations are embedded in context, unlike most of the formal plans

and urban development projects proposed by professionals. In light of the continued relative weakness of the state and private sector in the face of rapid urbanisation and widespread low income levels, what is needed most now is a professional openness to alternative modernities and forms of urban development that are based on contextual demand.

The Maputo experience of people-oriented urban development from the 1980s still shows how a strategic, low-cost and hands-on approach to the reality of a rapidly expanding urban setting can produce significant results, particularly in relation to urban health. Rapid urban growth in African countries alongside high levels of poverty requires active planning *with* people and not planning *for* people. While the present context, and hence the means of operation, for this will be different from that of the 1980s, the goal still must be to move beyond limited pilot projects, typically funded by international agencies and implemented by non-governmental organisations, and instead engage with the ‘informal’ practices of urban land development and construction in informal settlements, while guiding such practices to ensure social and cultural aspirations are healthy, inclusive and self-managing. Arguably, the era of top-down planning is ending and here Africa can provide new models for people-based urban development.

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## DESIGNING DENSITY IN KARACHI: ALTERNATIVES TO APARTMENT BLOCKS

### Arif Hasan

Karachi contains 10 per cent of the total population of Pakistan and 25 per cent of its urban population, and yet it generates 15 per cent of national GDP and 62 per cent of income tax. In spite of being the major industrial city of Pakistan, in 1990 a total of 75 per cent of Karachi’s working population worked in the informal sector, primarily in garment, leather, textile, carpet and light engineering sectors. These sectors, and therefore the majority of the working population, tend to be based in low-income settlements.

Land in Karachi is very unevenly distributed between the formal and

informal sectors. A total of 62 per cent of Karachi’s population lives on the 8.1 per cent of land that has been informally developed. And, while 80 per cent of Karachiites live in houses on plots of 100 square metres or less, plots of between 334 and 1672 square metres occupy about 20 per cent of Karachi’s residential area, despite accounting for only 2 per cent of the total housing stock.

The city government of Karachi has marked 72 per cent of informal settlements established before 1997 for regularisation, which involves the grant of a 99-year lease to residents and provision of physical and social infrastructure, while minimising the displacement caused. However, there is considerable pressure from a broad range of interest groups, including developers, bureaucrats, professional institutions and politicians, to initiate a process of replacing those settlements established before 1997 that are on prime land, as well as all those established after 1997 with commercial developments, apartment blocks and shopping plazas. Added to this, there is considerable pressure from the same groups that new formal sector developments for low- and lower middle-income groups should follow the same principles.

Many of these new informal and formal low-income settlements are far away from employment zones, which makes it very difficult for residents, especially women, to work. Surveys show that people living in these settlements spend three to four hours per day travelling from home to work and back, at a cost of Rs 56 to 100 (US\$0.65 to US\$1.16) per day. In addition, social costs include a reduction in the time that workers, usually men, are able to give to their families, and increased tiredness and ill health due to the time spent commuting in environmentally degraded and uncomfortable conditions.

Although land for housing is available in informal and semi-formal settlements, expanding families cannot access it as easily as they did in previous decades, due to a massive increase in the cost of land. One square metre of land in a newly developed katchi abadi (neighbourhood) cost 1.7 times the average daily wage for an unskilled labourer in 1992, compared to 40 times today. As a result, the only affordable and secure option for an increasing number of families is to build upwards, densifying their settlements. Nawalane in Lyari, for example, had a density of 620 people per hectare in 1992, compared to over 3,250 people per hectare today. Similar conditions are emerging in most of the older informal settlements and in many formal settlements as well. Apartment complexes, which had an average of 5 or 6 people per apartment living in them a decade ago, now often have 12 to 15 people. Although high densities have numerous advantages for city and infrastructure planning, the abnormally high and unplanned densities emerging in the older settlements of Karachi are leading to significant social and physical problems. Overcrowded quarters can lead to family quarrels,

tension among children and adolescents, promiscuity, inconvenience for married couples, breakdown of community cohesion, problems in use of toilets and kitchens, which increasingly have to be shared, and an increasing gap between water demand and supply.

Density is thus a critical issue in relation to sustainable urban planning, and so we conducted a series of four case studies in low- to lower middle-income housing sites in Karachi. The research, in collaboration with the Urban Research and Development Cell of the Department of Architecture and Planning at the NED University Karachi and supported by the International Institute for Environment and Development (UK) investigated three settlements of small plots and one apartment complex and included a hypothetical redesign exercise to explore how high-density settlements could be constructed on these sites according to peoples’ preferences, without compromising their living conditions.

The four case studies yielded a number of conclusions that could inform the planning of liveable high-density housing in low- to lower middle-income areas. First of all, the vast majority of respondents and interviewees in the four settlements wanted to own a house and not an apartment. They pointed out that it was essential that they carry out some income generating activity in their homes, something that was not possible in an apartment complex, apart from activities such as giving tuition to school children. In addition, they preferred homes that could grow incrementally to house some of their married children, since finding separate accommodation was not an affordable option. Again, this was not felt to be possible in apartment buildings. There was a general consensus among those living in plot settlements that when they first built their homes, they did not consider the additions that they would make incrementally as their needs increased. As a result, their houses were badly planned and ventilated, and the settlements environmentally degraded. They agreed that if they had had access to design and technical advice when they first built their homes, they would not have suffered these problems to the same extent.

For the hypothetical remodelling process we provided plots of 47 square metres. We were able to achieve much higher densities – up to 3,157 persons per hectare – than the Karachi Building Control Authority (KBCA) prescribed maximum of 1,275 persons per hectare for apartment blocks. This was true even in the case of the newly developed plot settlement: by remodelling it, we were able to increase the number of plots from 1,237 to 1,910. We made each plot narrower, reducing infrastructure costs and increasing density from 501 persons per hectare to 1,755 persons per hectare. In addition, the unit cost of a plot was reduced by 41 per cent.

There is, however, a limit to the density that can be reached without compromising on the quality of the physical and social environment. Houses

higher than ground level plus three floors on small lots are uncomfortable, and their living spaces on lower floors lack light and ventilation. Decreasing space for amenities and social facilities also adversely affects social and environmental conditions. In our replanning exercise, we avoided increasing house heights above ground plus three floors or cutting back on amenities and social facilities. We also always kept a courtyard in the centre of each plot in order to provide light, air and an open family get-together space. Under these conditions, we found that it was not possible to achieve densities of more than 3,500 people per hectare.

Apartment complexes are more lucrative for developers than small-plot settlements because there is more housing for sale immediately after construction. Developers are therefore key agents in shaping the urban form of new and upgraded settlements. We therefore chose one case study that was the site of an existing apartment complex. Following discussions with developers, our redesign managed to achieve the same densities (around 2,800 people per hectare) as the existing apartment blocks, and the developers were satisfied with the profits that they could make under this proposal.

Our study has been widely circulated and discussed, and has also been used as teaching material at the Department of Architecture and Planning at the NED University in Karachi. Furthermore, a housing project in Lahore has asked us to design a settlement of eight hectares on the principles we have developed as a result of the study.

Plot settlements meet the requirements of low- and lower middle-income groups better than apartment blocks. They are physically and socially friendlier and are more affordable since they can grow incrementally as and when the need arises. Our study shows that they can achieve more than the densities prescribed by the Karachi authorities and can provide acceptable models for developers. People’s preferences in low-income settlements in other cities of Asia are not dissimilar to those we have documented in Karachi. It is necessary to develop appropriate bylaws and zoning regulations to promote high-density, individually owned houses. The existence of an advisory cell or organisation that gives advice on incremental development would help such settlements to grow in a more organised manner.

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## PRIMARY HEALTH CARE: THE HEALTH CARE SYSTEM REFORM IN RIO DE JANEIRO

### Hans Dohmann

The democratisation process that led to the creation of the Sistema Nacional de Saúde Brasileiro (SUS; Brazilian National Health System) during the 1980s aimed essentially to reorientate the health care model in Brazil. The development of the ‘Family’s Health Strategy’ programme (the backbone of the National Health System), took place during a period of significant change in the country and its conception was heavily influenced by the WHO Alma Ata declaration principles of universality, inclusiveness and equity. The basic principles of the SUS are decentralisation and social participation.

The Atenção Primária à Saúde (APS; Primary Health Care) is understood as a strategy of reorientation of the model of health care and can be defined as:

- A group of values: the right to the highest standard of health care, solidarity and equity;
- A group of principles: governmental responsibility, sustainability and intersectoriality, meaning social participation; and
- A group that is inseparable from structural elements of the health services structure: access to first contact, integration, longitudinality, coordination, family and community guidance and cultural competence.

According to the Pan-American Health Organisation (PAHO), Primary Health Care services should constitute the basis of any national health care system, as it is considered to be the best strategy for producing sustainable improvements and greater equity in a population’s health. In order to respond to the demands of the changes in the population epidemiologic profile, which now includes a growing prevalence of chronic diseases, the national health care system in Rio de Janeiro has been focusing on better coordination between the different levels of attention and between various organisations. The consolidation of an integrated health care network is precisely the role that Primary Health Care services in Rio de Janeiro play.

This integrated health care network is characterised by a defined territory and population, with a wide range of health care institutions and services coordinated at the Primary Health Care level. The network is constituted by or coordinated with the use of electronic information systems, with a care model centred on the individual, the family and on the community/territory, under a single and adequately financed management system.

The Municipality of Rio de Janeiro is situated in the southeast of the country,

and has a population of some 6,320,744 inhabitants. The reform of the city’s health care system commenced in 2009, and was coordinated and organised by APS.

In December 2008, family health care in the municipality reached just 3.5 per cent of the city’s population (targeted through 62 family health teams). This figure increased to 26.1 per cent in October 2011 (478 complete teams providing access to health care for 1,649,100 inhabitants).

Each family health care team comprises one general practitioner, one nurse, one nursing technician, six community health workers and one community health care invigilator, all of whom are responsible for approximately 3,450 people in the community. The team not only provides general health care for these individuals but also is responsible for maintaining the follow-up care of those patients who require access to other forms of health care, such as secondary care or hospital networks, on a long-term basis.

In order to respect the principle of equity, this expansion of outreach by the family health care teams happened in a heterogeneous way and did not occur simultaneously. The areas with the greatest gaps in health care services, located in the west, were attended to first. The outreach of APS in those areas reached levels above 90 per cent, even in those areas furthest away from the centre.

During this period, 43 new Primary Health Care units were built, increasing the total number of units in the city to 172. Important components were taken into consideration during the building of these units to foster both the motivation of the professional staff and to provide greater comfort for the service users. Some examples include better use of sunlight and air circulation within the units, energy-saving initiatives, and the use of rain water for gardens and toilets.

In order to standardise the Primary Health Care provision for the city, in August 2010 the portfolio of APS services was launched with a set of procedures that were to be utilised by all units according to their capabilities. The portfolio enabled APS not only to increase its services to the population but also the resolvability of each of the family health care teams, making APS more widely accessible and less focused on procedures exclusively related to prevention/promotion or, at the other extreme, to emergencies.

A further mechanism that improved the quality of service in the APS network was the computerisation of every work centre in the family health care units and the installation of electronic records. Since January 2011, this computerisation enabled the establishment of a payment system relating to the performance of each health care professional through two sets of variables: one for each health care unit and one for each family health care team, with quality indicators that look to improve the organisational system of the clinic. Part of the salary of the professionals (up to 10 per cent) can be made up of those two variables.

Preliminary results showed a greater

satisfaction with the provided services amongst the population, as access to health services widened, as well as among health professionals, who were more motivated to use good clinical practices.

Furthermore, it is already possible to observe a decrease in hospitalisation rates for conditions more commonly treated by Primary Health Care, such as non-contagious chronic diseases. Results also showed a reduction in child mortality and cardiovascular diseases, particularly in the areas with a greater expansion of Primary Health Care. A further result is the decrease in demand for emergency treatment in larger hospitals, which, in turn, have improved the services they provide for more serious emergencies. It is also evident that, in the community where the health care units are built, there have been improvements in the urbanisation of the neighbouring regions. These include better mobility for people and income generation for many inhabitants in the neighbourhood, who end up working in the family health care clinic. There are also indirect income-generating improvements such as the creation of local businesses, which, in turn, results in the increase of value of housing in those areas.

*Hans Dohmann is Municipal Secretary of Health for the city of Rio de Janeiro, Brazil. Dohmann was formerly Director of the National Heart Institute (INC) in Orange, where he deployed the cardiac transplant program in 2008. He coordinated teams that performed the first implant in the world of stem cells in heart and brain, putting Brazil in the forefront of stem cell therapy.*

## NEIGHBOURHOOD-BASED APPROACHES TO POVERTY CONCENTRATION IN VANCOUVER

### Nathan Edelson

About 17,000 people live in Downtown Eastside, Vancouver, more than 75 per cent of whom are on low incomes. They include retired and injured resource industry workers, people addicted to illegal drugs or alcohol, people released from mental institutions that have been closed, single-parent families, as well as about 1,000 people who are homeless or who live in shelters. Some are there because they have no choice; most because it is their community.

Downtown Eastside also has a very active and visible illegal drug trade and its main shopping street has 20 to 30 per cent vacant storefronts. At the same time, the area is located near a thriving central business district and high-density middle-income residential areas. It also features heritage buildings, parks, theatres and views of the bay and mountains and, as a

result, it is potentially attractive to market housing and downtown support services that are threatening to gentrify the area and displace the poor.

I want to share a few observations from my experience of working with low-income communities as the Senior Planner for Downtown Eastside between 1993 and 2008, as well as my work as a community planner with the City of Vancouver Planning Department for 25 years.

In the mid-1990s, the question for Vancouver City officials was: ‘should we let gentrification and displacement take place “naturally”, should we provide incentives to speed up the process or should we try to stop it from happening?’. The City Council, following staff recommendations, chose the latter: it had found no definitive evidence that a concentration of low-income residents was – in and of itself – a bad thing. They chose not to pursue a community planning process, which would have effectively involved saying: ‘we are going to improve your neighbourhood but about 50 per cent of existing residents will have to leave’.

In our approach to community planning, we defined ‘gentrification’ as the transformation of an area that once housed low-income and working-class households, to one dominated by middle- or upper-income households and values. Irrespective of the causes, in areas with heritage character such as Downtown Eastside, people and businesses that can afford higher prices start to drive up the costs of real estate, and the following processes start to unfold:

- Housing becomes unaffordable to low- and moderate-income households;
- Expensive shops and restaurants replace those that are more affordable;
- The new homeowners, tenants and businesses form an alliance to control the public realm and policing, and long-term residents become strangers in their own communities as their behaviour on the street is challenged;
- The newcomers also form alliances to oppose not only new health care and social services needed by the poor, but also to claim that some existing services should be closed because the area has more than its ‘fair share’.

The strategy in Vancouver has been to try to reverse these processes of gentrification. The key has been securing low-income housing – to fulfil a City Council commitment to replace single-room-occupancy residential ‘hotels’ (SROs) one-to-one with purpose-built social housing. The housing plan also calls for a mix of housing, with a strong emphasis on affordable rental units. This includes housing affordable to support and service workers working in Downtown Eastside and in the nearby Central Business District so they don’t have to commute from distant neighbourhoods. The plan is intended to create a more inclusive social mix, rather than having just very high- and very low-income people, and to allow those who climb out of poverty a chance to remain in the

neighbourhood.

The strategy also includes an economic revitalisation plan that has provisions to create jobs and affordable commercial services for low-income residents, community-based policing that is reflective of the values of existing as well as new residents and business people, inclusive public spaces and needed health care facilities, ranging from a dental clinic to North America’s first supervised injection site for people who use illegal drugs.

Unfortunately, a significant part of the strategy has been challenging to realise in the face of significant government cutbacks, especially in the provision of social housing, but also some essential social and community economic development services. That said, for a number of reasons, including the commitment of the City Council, local residents and community organisations, much of the strategy continues to move forward.

Staff from the City Council and senior government officials have concluded that it is not the number or the density of low-income groups in an area that matters, but rather the sense of community. These ideas have been influenced by the work of Dr Bruce Alexander of Simon Fraser University, who has written about the ‘globalization of addiction’, as well as by direct experience in working on the Downtown Eastside strategy. Alexander describes how many people in North America and Europe suffer from addictions, not only to illegal drugs, but also to smoking, alcohol, shopping, food and work. He says the cause is the sense of dislocation people feel in a world that is changing so rapidly – and feels beyond our control. Alexander claims that, if the cause is rapid change and the symptom is addiction, the cure is community – a sense of belonging – where your skills are valued, where personal shortcomings are tolerated, and where you are known and can come to know yourself.

So how do we build a sense of community? In the case of Vancouver’s Downtown Eastside, we concluded that:

- It comes from struggle, and first and foremost, the struggle for neighbourhood identity. In our case, the name, Downtown Eastside, was invented to indicate that this area of the city was no longer ‘Skid Row’ or slum as it had formerly been called. Today, this sense of struggle continues as low-income people to fight for housing and the services they need to survive;
- Then it comes from survival. In the 1970s, the community of Downtown Eastside fought hard to get the city to install sprinklers in SROs so that residents would not be burnt to death in fires. More recently extremely high rates of HIV, AIDS, Hepatitis C, and other infectious diseases, have been significantly reduced as a result of the successful fight to achieve innovative health care services, such as a needle exchange and North America’s first supervised injection site;

- Then from gathering. The Carnegie Community Centre was created in Downtown Eastside in the 1980s to serve as a ‘living room’ for the many residents living in very small residential units. It is funded by the city and managed by a community-based board of directors, providing much needed cultural and recreational services and a base for community organising around a wide range of issues. Other public spaces of social meaning have also been created and revitalised sensitively with considerably community engagement, as has been the case with Oppenheimer Park, where the Japanese were rounded up during World War II;

- Then from political power. There have been many voter registration drives and several outstanding individuals from Downtown Eastside have been elected to public office at all three levels of government;
- Then from local enterprise. Downtown Eastside’s ‘United We Can’ is a bottle recycling plant that is owned and operated by the ‘binners’ who scratch a living by collecting bottles, but the area also includes community-owned coffee shops, grocery stores, housing providers and maintenance and security companies;
- Then from nutrition. Pot Luck café is community-owned and provides affordable food in a small restaurant that is open to the general public. It also has a very profitable catering service that trains and hires local residents and raises money that helps feed the poor through community kitchens in Downtown Eastside’s many SROs and social housing projects. The Downtown Eastside Neighbourhood House is working with other groups including Carnegie and Pot Luck to improve the quality and quantity of healthy food available to the poor;
- Then from expression. There are many community arts initiatives in Downtown Eastside. At the forefront is the annual ‘Heart of City’ festival, which helps many local residents to demonstrate their skills to a city-wide audience, whether as performers, set makers or ticket sellers, and enhances community pride. Based on Venezuela’s El Sistema method, the St James Music Academy gives more than 125 low-income children the opportunity to learn to play classical music – an experience from which they also gain self-discipline and a sense of being part of a community. And the programme has ripple-like effects on their families and their friends and neighbours’ families.

Many low-income residents in neighbourhoods such as Vancouver’s Downtown Eastside have faced incredible challenges in their lives. Public officials and community leaders are often pressured into making decisions – either explicitly or through inaction in the face of market forces – that result in the dispersion of the poor from areas in which

they have been concentrated. Low-income communities have been treated at times as if they were social bacteria infecting society. Such processes and treatments are harmful, not only to the low-income residents who are scattered to places where they have little social support, but also to us all.

Addiction is something that affects all of our lives. A strong sense of community can be an important part of ‘treatment’, helping to reduce the negative impacts of addiction.

The experience of the Downtown Eastside community suggest that it may be worthwhile to look for leadership in those who have gone through the pains of the worst our societies have offered, and who have come back from these severe circumstances with a sense of compassion and confidence. They may be the social ‘coal’ transformed into ‘diamond’, able to teach low-income people in their communities and, perhaps as importantly, to help lead us all toward better societies.

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## HEALTH AND WELL-BEING IN EAST LONDON

### Stephen O’Brien

The recent death of Jenny Worth catapulted obituary readers back into the East London of the 1950s and 1960s. Worth had written a trilogy about her life and work there as a young midwife and staff nurse at the London Hospital. Her best known title is *Call the Midwife*. It is a vivid account of life, birth and death in the tenement buildings of Tower Hamlets and a reminder of the impenetrable depth of poverty in the hinterland to London’s docks. Much has changed for the better since then. The tenements have been replaced by vast estates of local authority housing, the contraceptive pill has played a key role in changing lives of the women there and Canary Warf, the new Royal London Hospital and the Olympic site dominate the skyline.

But much has remained the same – at least relatively. A King’s Fund report recently noted that ‘In London the life expectancy of the local population falls by one year with each station along the Jubilee Line between Westminster and Canning Town.’ The Health and Wellbeing Strategy of Tower Hamlets noted in 2009 that ‘Life expectancy is highest in Millwall ward in both males and females

(80.2 years and 84.6 years respectively) and lowest for both in St Dunstan’s and Stepney Green (71.9 and 78.2).’ These wards are a short walk from each other. Tower Hamlets has the worst child poverty in the UK. The leader of a youth club within 182 metres (600 feet) of the heart of the City, with its bonus culture, explained in a matter-of-fact tone of voice that ‘if you are not doing well in school, you go into drugs and prostitution’.

This continuing social poverty breeds a lack of aspiration and hopelessness, which in turn has a deep impact on health. Across the whole of northeast London there is a large and growing number of people who are seriously overweight and take no exercise in spite of the excitement about the 2012 Games in their midst. The population eats too much of the wrong foods, smokes and drinks too much, and diabetes is growing alarmingly. The incidence of TB, once thought to have been eliminated in the UK, is growing fast and teenage pregnancy remains a huge issue. London has the highest rate of under-18 abortions and one of the highest rates of teenage conceptions in England.

On the other hand, East London remains an extraordinarily vibrant community. It is still the main ‘arrival’ point for migrants who, together, have built London into the world’s most multicultural and diffuse city. This is now seen as a huge asset in terms of international competitiveness.

Improvement in school performance has been very marked in Tower Hamlets and Hackney recently and there is no doubt that this is beginning to lift the sights of a new younger generation, much of it in the Bengali and African Caribbean communities. However, prior generations of school children remain untouched by this and therefore unemployed and without skills. Some eighteen months ago The Equality and Human Rights Commission began to look at the NHS performance on ‘equality duties’. Their findings are deeply depressing. They say in bland language that ‘Much greater attention needs to be paid to leadership, commissioning and employment than ... has been the case up to this point.’ Put more bluntly, there needs to be a revolutionary attack on health inequalities in East London and it needs to begin now and involve and include all the public sector agencies and the private and third sectors working together to a precise timetable. The Olympic Games is the catalyst. Can this be done? The answer has to be ‘yes’ and here is how.

Firstly, the huge investment around 2012 has to be the starting gun for transformation and there are at last real signs that the public sector is beginning to understand that they have it in their hands to build East London out of 150 years of poverty. Starting with health, Sir Mark Walport, Director of the Wellcome Trust, writing recently from a patient perspective in *The Times*, declared that ‘All strands of health care, including primary, secondary and mental health must be integrated.’ This is a very long way from the present position. Some of the Coalition Government’s planned reforms

may eventually help: there is a strong drive to re-think public sector commissioning to target individual wards and set clear and deliverable targets for commissioners working in partnership rather than in isolation. In East London there is a huge opportunity provided by the potential merger within the acute sector of Barts and the Royal London with Whipps Cross and Newham General hospitals. By delivering this and striking the right relationship with the other hospitals in East London, and with public health and social care systems moving closer together and commissioning reorganised into much larger groupings, there would be something like a single health care system for northeast London. If all decisions were then genuinely to be taken in the interests of patients rather than institutions, the revolution might be started and in 2012!

The three inner East London boroughs are now blessed with able elected mayors. This provides a further potential for cooperation across the difficult and often ill-defined administrative boundaries of social care, housing and health care. Long-term poverty cannot be eliminated and attacked on all fronts at the same time. We should begin at the beginning and try to give a real life chance to those who are newborn or at pre-school age. A successful programme imported from Canada, called the Family Nurse Partnership, has been trialled in Tower Hamlets and we now need to build this across East London as part of a real Olympic legacy. It teaches parenting skills and supports new and chaotic parents throughout those difficult early years leading on to a full support system for the children through schooling and into a decent job. The latter part of the programme is supported by the Mayor’s (Boris Johnson’s) Fund for London with a number of big private sector players providing the cash.

The correlation between unemployment and bad health is well documented and it is increasingly clear that, after generations of government training provision for those on the long-term register, little has been achieved in East London. Alumni of employability schemes know that generalised training rarely leads to a decent job. Top quality training run by the public sector for known jobs in the public sector in East London would almost certainly lead to much better outcomes. It would have the added benefit of helping public sector agencies understand the needs of their local communities much better and then to angle service provision much more accurately.

Finally we need to commission our local services very differently. Most of them are emanations of politically driven programmes in Whitehall and are very blunt instruments. Poverty is very unevenly distributed at the local level as the Tower Hamlets example shows. We need to target needy wards and housing estates much more accurately and only local knowledge can do this. An alternative would be to ask the local authority, the NHS and the Metropolitan Police to define the problem and them jointly commission known local providers

to deliver and assess the outcomes.

Delivered together these three programmes, including a consolidated health care system for northeast London, the Family Nurse Partnership and locally targeted employment solutions, would provide a lasting legacy for East Londoners, transforming lives as well as eliminating health inequalities.

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**URBAN AGE**

The Urban Age Programme, jointly organised with Deutsche Bank’s Alfred Herrhausen Society, is an international investigation of the spatial and social dynamics of cities centred on an annual conference, research initiative and publication. Since 2005, more than ten conferences have been held in rapidly urbanising regions in Africa and Asia, as well as in mature urban regions in the Americas and Europe. The conferences operate as mobile laboratories, testing and sampling the social and physical characteristics of global cities through expert presentations and testimonials, research, site visits, mapping and informal information exchange.

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LSE Cities is an international centre at the London School of Economics and Political Science, supported by Deutsche Bank, that carries out research, education and outreach activities in London and abroad. Its mission is to study how people and cities interact in a rapidly urbanising world, focusing on how the design of cities impacts on society, culture and the environment. Through research, conferences, teaching and projects, the centre aims to shape new thinking and practice on how to make cities fairer and more sustainable for the next generation of urban dwellers, who will make up some 70% of the global population by 2050.

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**Alfred Herrhausen Society, The International Forum of Deutsche Bank**  
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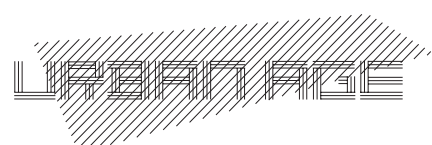
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### 23



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