



IUSSP Seminar: Urban Health Transformations

**Organised by the IUSSP Historical Demography Panel &
The Cambridge Group for the History of Population and Social Structure**

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Health in urban areas has played a major role in determining trajectories of demographic growth, economic success and individual and community well-being across time. However the relationship between health and urban space has not been constant over either time or place. Before the early twentieth century, towns and cities suffered a probably universal urban mortality penalty, and in some periods acted as ‘demographic sinks’, characterized by high death rates largely due to air and water-borne infections. The improvement of urban environments, together with the development of better preventive and curative medical services which tend to be based in cities, means that urban areas today have lower mortality than their surrounding areas. Although the decline of mortality in urban areas has been studied, there is little consensus about how urban spaces were transformed from unhealthy to healthy places. Such changes are unlikely to have happened at the same time or stage of industrial, economic or infrastructural development in every place, but it has not been established whether there are any key developments which are necessary or sufficient for such transformations to occur. Attempts have been made to link declines in mortality to the introduction of sanitation and water supply, but with mixed success. The roles of housing, street paving, air pollution, and animal keeping in fostering a hostile disease environment have been addressed less often. Municipal governance and institutions have been linked variously to poorer and to better health. How migration contributes to observed mortality rates is also poorly understood: migrants seeking work or a better life are often selected for better health, but may lack immunities to specific urban diseases. Chronic conditions such as tuberculosis may be linked to return or health-seeking migration, and such factors make it hard to disentangle the ways that migration, as other possible influences, might be linked to health outcomes. This meeting brought together researchers who addressed these, and related, topics for different areas of the world, from Cambodia to Copenhagen, and from the nineteenth century to the present.

The meeting started with two papers addressing the nature of the urban setting and how that affected mortality among older adults. Danan Gu, from the United Nations Population Division, considered exposure to urban life and mortality in older cohorts in China focussing on migrant status and the length of exposure to the urban setting. Matthias Voigt, from the Spanish National Research Council, examined how the effect of sociodemographic characteristics on health outcomes varies by levels of urbanicity in Andalusia, Spain, where urbanicity was defined using an index based on a variety of factors including population

density, health and living conditions, occupations and perceptions. Both papers concluded that despite lower mortality in urban areas overall, once socio-economic conditions and other factors were fully controlled there was a higher risk of mortality in urban areas. A lively discussion ensued regarding what it is to be urban and the possibility of the renewal of an urban mortality penalty.

The next session continued with the theme of migration and mortality, specifically the notion that rural to urban migrants will 'come home to die' if they contract a chronic disease such as AIDS or tuberculosis. The two papers were from very different data settings and time periods: Carren Ginsburg (University of the Witwatersrand, South Africa) focussed on Kenya and South Africa using recent Health and Demographic Surveillance Data, whereas that of Eilidh Garrett (University of Essex) used linked census and civil registration data for nineteenth century Scotland. Nevertheless they had many parallels, not only in their strong support for the returning home to die hypothesis, but also regarding the importance of gender differences in behaviour – whether that was health seeking behaviour or the propensity to migrate in the first place. Both papers also commented on implications for broad theories: Ginsburg argued that the difference in risk by migrant status is better explained by structural socio-economic issues rather than by the stage of the epidemiologic transition; Garrett's demonstration that the risk of dying from TB was higher for young males than females working in textile and non-manual occupations casts doubt on the link between nutrition and TB which is at the heart of Thomas McKeown's theory of mortality decline.

During the conference there were two sessions relating to the development of sanitation and water supply in nineteenth century cities, and the first of these sessions was focussed on the UK. In her paper Romola Davenport (University of Cambridge, UK) argued that the common use of infant mortality as an indicator of water quality is misguided as breast-fed infants were more vulnerable to diseases (such as diarrhoea) spread by food or insect vectors. However cholera, highly dependent on water for transmission, makes an appropriate 'sanitary test'. Her results suggest that cholera was not very sensitive to piped water, and she concluded that the introduction of piped water did not necessarily result in a higher quality water supply. The challenges of how to measure sanitary investment and the development of water supply and sanitation in Britain were addressed by Bernard Harris (University of Strathclyde, UK). He described a newly collected data source on loans issued by Parliament under Local Acts which shows more complete coverage of money available for such investment at a local level between 1817 and 1914, broadly confirming the previously incomplete picture of increasing sanitary effort towards the end of the nineteenth century. Andrew Hinde (University of Southampton, UK) then used national and local mortality series, together with local case studies, to demonstrate that even with more accurate data it is difficult to demonstrate a relationship between investment and mortality change as loans were often the culmination of a longer discussion and of less capital intensive initiatives. He argued that loans might be best understood as an indicator of the strength of concern related to public health.

The two papers in the next session examined health within urban areas. Ankita Shukla (Population Council, India) investigated the effect on mortality of having higher or lower levels of deprivation than surrounding areas. She found strong effects for districts in India, and considered the role of infrastructure and psycho-social effects. In her paper Bárbara Revuelta-Eugercios (University of Copenhagen, Denmark) addressed the challenges of

interpreting measurements of birth-weight from historical populations. Most historic birth-weight measurements derive from hospital deliveries which are often highly selected, so these new data from a large number of home deliveries are an important data source. Preliminary analysis indicates that the percentage of low birth-weight infants in Copenhagen in 1927 was not significantly larger than today, and that maternal age and parity were the most important determinants of low birth-weight.

The second day started with four papers on maternal health. The first two papers addressed access to health care in low and middle income countries. Myriam de Loenzien (CEPED-IRD, France) addressed urbanization as a determinant of increasing caesarean delivery in Viet Nam and Cambodia, where caesarean rates are twice as high in urban areas compared to rural. Her analysis showed that health infrastructure, socialisation processes, and perceptions of the baby's size were important determinants of the different rates. Eric Koba (Institut de Formation et de Recherche Démographiques, Cameroon) and Donita Nshani Tata (The University of Yaoundé I, Cameroon) addressed access to maternal health care in Senegal, finding that take-up of care was higher in urban areas and among higher socio-economic and more educated groups. Together these two papers suggested that both availability and individual choice are important determinants of maternal health behaviour. The final two papers in this session addressed maternal mortality in nineteenth century Europe. Angelique Janssens (Radboud University, Netherlands) examined the spatial patterns of maternal mortality in the Netherlands. She showed a correlation between maternal mortality and female tuberculosis mortality, particularly in rural areas, and argued that this lent strength to a picture of chronic female undernourishment. Alice Reid (University of Cambridge, UK) compared different ways of measuring maternal mortality to demonstrate that many maternal deaths could not be identified using the recorded cause of death. She showed that under-recording was much greater in urban than rural areas where more deaths were certified by doctors who may have given a narrowly correct cause which omitted to mention a recent birth. Accounting for this reversed the rural-urban gradient in maternal mortality and she cautioned against urban-rural comparisons in causes of death where medical certification of death was highly variable.

Next came our second session on sanitation and health in the past. Martin Önnersfors (Lund University, Sweden) used a detailed dataset relating to water processing and sewerage in Swedish cities to show that the introduction of water processing and sewage provision was strongly correlated with decline in waterborne (but not airborne) diseases, that the type of processing was important, and that it was better to have both water and sewerage than just one. Michael de Looper (Australian National University) provided a focussed look at the political and practical forces behind the trajectory of water and sewerage provision in Sydney, Australia, demonstrating a clear link between the introduction of clean water and the decrease in mortality from typhoid. Diego Ramiro Fariñas of the Spanish National Research Council also focussed on a single city, Madrid, in the early twentieth century. His detailed dataset enabled street level water and sewerage provision to be linked to individual mortality risks. He found that infant and child mortality were much more strongly dependent on water supply than on sewerage, and that there were also very persistent intra-urban inequalities in the speed and extent of service provision.

Our final set of papers was focused on illness. Helene Castenbrandt (University of Gothenburg, Sweden) analysed the records of two sickness funds for the city of Gothenburg in the early twentieth century. The fact that one of these was a women's fund provides a

rare opportunity to compare men's and women's sickness episodes, and she found that women tended to have fewer, but longer episodes than men. It is as yet unclear whether this was due to selection of women into paid work, gendered health seeking behaviour, or some other reason. Teke Johnson Takwa of the Central Bureau for the Census, Cameroon, examined rural-urban differentials in anaemia prevalence among children in Cameroon. Anaemia prevalence was lower in urban areas, where it was linked to retarded growth, household living standards and the source of drinking water, among other factors also influential in rural areas. He argued that increasing urbanisation is likely to contribute to a future decline in anaemia, but only if urban growth is also accompanied by improving water supply and living standards. The final paper was presented by Grazyna Liczbinska of Adam Mickiewicz University, Poland, who used death registers for four Polish cities in the 19th and early 20th centuries to reflect on health and mortality. She showed that infant mortality was higher in industrial cities and before the introduction of sewerage.

To conclude the seminar our guest discussant, Tim Dyson of the London School of Economics and Political Science (LSE), provided an insightful and (mainly) sympathetic closing commentary. During this he drew together some of the major themes of the seminar and raised some broader issues. These included the perennial problem of how to define 'urban' which challenges both historical and contemporary demographers, and the fact that the nature of the urban-rural contrast may change over time and with the level of urbanisation. Nevertheless, he noted that many of the issues covered by both historical and contemporary demographers are the same. He felt that this seminar brought these out very nicely and can be seen as a *prima facie* case for the establishment of a new IUSSP panel on the urban sector.

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