

## **Studying Health in Towns Workshop - Abstracts**

**Monday June 30<sup>th</sup> – Cambridge West Hub, East 1 (first floor)**

### ***13:00 – 15:00 - Medieval Towns***

Chair: Simon Stoddart (Department of Archaeology, University of Cambridge)

**Carole Rawcliffe (School of History and Art History, University of East Anglia)**

#### ***Cleaning up the Middle Ages***

Drawing upon recent research and a range of archaeological, documentary and topographical evidence, this paper examines some of the principal areas in which the rulers and residents of late medieval north European towns and cities sought to improve their health and the environments in which they lived. The circulation of vernacular guides (especially after the Black Death) based on Greek and Arab medical texts, gave an impetus to pragmatic schemes for the cleaning of streets, the protection of fresh water supplies and the avoidance of activities likely to generate corrupt air. The widespread assumption that such a religious society must have reacted to epidemic disease with blind fatalism runs counter to contemporary beliefs regarding the spiritual value of public works and the intimate connection between health and morality. Nor can it be argued that legislation, however well-intentioned, could not be effectively enforced without the mechanisms of the modern state. Evidence abounds from legal records of initiatives by local communities to hold authorities to account and to ensure that the serial offenders in their midst were effectively – and publicly – punished.

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**John Robb (Department of Archaeology, University of Cambridge)**

#### ***Social inequality and the health landscape of medieval Cambridge***

**Craig Cessford (Cambridge Archaeological Unit)**

#### ***Water and waste in medieval and later Cambridge, c. 1050–1900***

Developer-funded archaeological excavations in Cambridge, England, since 1990 have shed considerable light on many elements of the development of the medieval and later town. Of particular significance to public health are the twin topics of water supply and waste disposal, which are both well represented in the archaeological record. While the nineteenth-century ‘Sanitary Revolution’ has left an undeniable archaeological imprint, albeit one that archaeologists have traditionally paid little attention to, the preceding 800 years also display evidence of considerable change. While more evolutionary than revolutionary, these earlier changes were cumulatively potentially as significant to public health as those of the nineteenth-century.

## **15:30 – 17:45 - Early Industrialisation + flash talks**

Chair – Romola Davenport (Department of Geography, University of Cambridge)

**Carry van Lieshout (Department of Geography, Open University)**

### ***Supply, sewers and sanitation in 18th century London***

Eighteenth-century London was a watery city. Contemporary maps such as the 1746 Rocque map show an abundance of visible surface water: open sewers, ponds, canals, docks, basins, mill ponds, pools of water, and of course rivers. In addition, there were fountains, conduits, and water pipes, as well as open and underground sewers. This visibility of water in close proximity to where people lived and worked reflects the fact that access to water was a biological necessity for London's inhabitants, and that organising its circulation and flow was, and to some extent still is, the basis upon which urban growth is predicated.

This paper argues that, as a result of the expansion of the built-up area, the institutions that managed eighteenth-century London's water became increasingly vital as the main mediators of the growing distance between the city's inhabitants and water. It considers London's drainage system and its water supply together, as changes in the drainage of surface water played a crucial role in creating the conditions for the growth of a commercial water supply that meant that the allocation of a natural resource became increasingly refracted through the market. At the same time, the process of urbanisation involved major modifications to the physical environment that collectively resulted in higher rates of run-off water, meaning that drainage systems had to be extended.

Based on the records of the various London supply companies as well as the commissioners of Sewers, this paper examines the responses of institutions and inhabitants to the intensification of alterations in London's waterscape – including its physical infrastructure, modes of accessing water, and everyday experiences of water quality and water nuisance. In doing so, it examines how problems relating to water and sanitation in a context of rapid urban growth were experienced and addressed over the course of the long eighteenth century.

**Jo Buckberry (School of Archaeology and Forensic Sciences, University of Bradford)**

### ***The price of progress: The impact of rapid urbanisation on health during the English Industrial Revolution***

## **Flash Talks**

**Justine Pick (Department of History, University of Birmingham)**

### ***The conservancy system in 19<sup>th</sup> century Birmingham***

**Isobel Grimley ((School of Archaeology and Forensic Sciences, University of Bradford)**

### ***Childhood frailty over time at the multi-period site of St Oswald's Priory, Gloucester***

Frailty assessments have been used to predict adverse health outcomes and aid in clinical decision-making. Adapted for application to skeletal remains, these detailed assessments

produce comparable yet comprehensive evaluations of past individuals' morbidity and mortality risk. However, thus far, this research has focussed solely on adults, despite children and adolescents being sensitive indicators of environmental change, and therefore integral for understanding past populations. Skeletal remains excavated from the multi-period site of St Oswald's Priory, Gloucester, provide an opportunity to investigate shifts in frailty throughout increasing urbanisation. This research has analysed frailty in 100 individuals aged 3-25 years-at-death (as part of a larger project exploring frailty across England) from the early medieval (c. AD900-1120), mid-late medieval (c. AD1120-1540) and post-medieval (c.1540-1869) periods at this site. Frailty was assessed using a novel index-based method, the Developmental Frailty Index (DFI). Results show DFI scores increase significantly over time at the site, with several biomarkers becoming much more common by the post-medieval period including periosteal new bone formation, dental enamel hypoplasia and scurvy. This research will show how bioarchaeological analysis can approach early life health in a more nuanced way to shed important light on the lived experiences of those growing up during these turbulent periods.

**Şahin Yeşilyurt (Faculty of Political Sciences, Ankara Yıldırım Beyazıt University)**

***Ottoman quarantine tax in the first half of the 19th century***

**Christina Papageorgopoulou (Department of History and Ethnology, Democritus University of Thrace)**

***CityLife: A bioarchaeological study of 1,800 years of resilience and adaptation to urbanity***

By exploiting the information contained in human skeletal remains, the CityLife project will clarify the roles of biological factors in the durability and sustainability of pre-industrial urban societies. Newly developed osteological, chemical isotope, and genomic methods will be used in this project, together with cutting-edge tools for statistical evaluation. CityLife will evaluate the living conditions, economy, population structure, pathogen load, and immune defenses in a sample of more than 4,500 skeletons from Thessaloniki, a hotspot of European urban culture. The city offers a unique constellation to study urban life diachronically from 300 BC to AD 1,500 and investigate urbanization in a single place continuously over 1,800 years. The main objectives of the project are to a) infer urban living standards by studying secular changes in anthropometric indexes, infant diet, childhood stress, and trauma in a combined manner; b) investigate the resilience and sustainability of urban food systems by reconstructing individual diets and local supply networks; d) investigate social structures, religious cohabitation, and migration by genetically reconstructing the degree of kin and non-kin relationships; and e) explore the effects of pathogen exposure on human evolution and health by studying genes associated with increased immunological response and the oral microbiome. CityLife will examine empirically tangible aspects of biocultural development to answer the simple question of how humans became urban species.

**Jenna Panter (MRC Epidemiology Unit, University of Cambridge)**

***How to measure the effectiveness of interventions and migration and residential self-selection***

**Malin Holst (Department of Archaeology, University of York)**

***'To prove I'm not forgot' - Giving a voice to the urban poor through analysis of skeletal populations from Northern England***

**Michael Henderson (School of History, Classics and Archaeology, University of Newcastle)**

***A multidisciplinary approach to an historical perspective on the 'North-South health divide' and regional health inequalities in England***

The United Kingdom currently faces some of the highest levels of regional economic inequality, which is particularly evident in the persistent narrative of the North-South divide in England. One significant aspect of this geographic disparity is the entrenched and longstanding inequalities in health and life expectancy. The causes of the contemporary North-South health divide are numerous and complex, likely encompassing environmental, occupational, migratory, and lifestyle factors, along with ongoing structural imbalances in resources and investments that have predominantly favoured the South, especially in and around London. However, the temporal dimension of these inequalities remains largely underexamined. This research seeks to provide a historical perspective on the underlying causes of these regional health disparities, examining the hypothesis that inequalities in health between the North and South of England have persisted since the mid-18th century. To achieve this, a multidisciplinary approach will be adopted, integrating archaeological, osteological, and historical sources to examine health and mortality during the period from approximately 1750 to 1850.

**Tuesday July 1<sup>st</sup> – Cambridge West Hub, East 1 (first floor)**

***9:00 – 11:00 – Industrialisation in Comparative Perspective***

Chair: Piers Mitchell (Department of Archaeology, University of Cambridge)

**Adrian Smith (Department of Zoology, University of Oxford)**

***Parasites as a tool in archaeological contexts***

**Lone Simonsen (PandemiX Centre, University of Roskilde)**

***Smallpox insights gained from Copenhagen outbreak investigations during the 1820s and 1830s***

Smallpox, a dreaded childhood disease that killed 25-30% of young children, was ended around 1810 in Denmark, thanks to a mandatory and free-of-charge Jenner vaccination program. A 14-year long Honeymoon period followed, but then in 1824 smallpox came back in smaller outbreaks. This paper is about the careful investigations done by physicians during the 1824-1835 outbreaks in Copenhagen. These are Danish-language publications and nearly 200 years old that have largely been forgotten. We dusted off these observations and data and studied the key societal and vaccine program context. Using modern epidemiological tools we study case fatality, vaccine effectiveness, patterns of waning immunity and investigate various hypotheses. We found that the virus had an unchanged case fatality ratio (as deadly as ever) in unvaccinated persons, and that the vaccine was ~95% effective in preventing mortality. The data clearly link “modified smallpox” to being unvaccinated, challenging thoughts about a different etiology or changing virus in the vaccination era. This was a unique and data-rich opportunity to study the transition from natural life-long immunity to an era of vaccine-induced immunity and a shift to become a milder adult disease.

**Rebecca Gowland (Department of Archaeology, Durham University) *Bioarchaeological evidence for rural/urban health in 19th century Yorkshire***

**11:30 – 12:30 – Keynote**

Chair: Toke Aidt (Faculty of Economics, University of Cambridge)

**Daniel Gallardo-Albarran (Economic and Environmental History Group, Wageningen University)**

***The Global Sanitary Revolution in Historical Perspective***

**13:15 – 14:45 – Industrialisation and its aftermaths**

Chair: Romola Davenport (Department of Geography, University of Cambridge)

**Jelena Bekvalac (Centre for Human Bioarchaeology, Museum of London)**

***The impact of industrialisation on London health***

**Hanna Jaadla (Department of Geography, University of Cambridge)**

***The late decline of infant diarrhoeal mortality in England and Wales***

This paper investigates the late disappearance of pronounced summer peaks in diarrhoeal deaths in England and Wales. We examine how the relationship between hot summer temperatures and infant mortality evolved from the 1890s to the 1930s, and explore the key factors contributing to this decline—including improvements in sanitary infrastructure, developments in transport, and changes in infant feeding practices.