LABORATORY FOR INTEGRATIVE AND TRANSLATIONAL RESEARCH IN POPULATION HEALTH

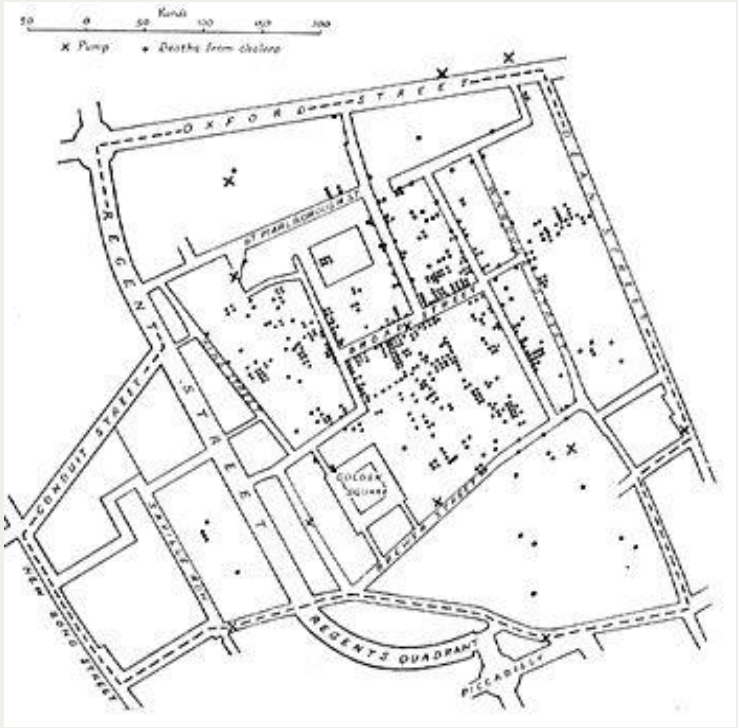
Ana Isabel Ribeiro
Junior Researcher and Lecturer

Health and Territory Lab

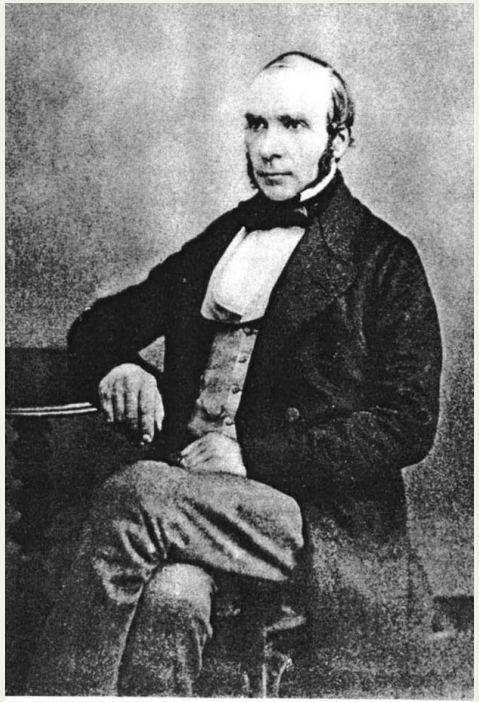
EPIUnit - Instituto de Saúde Pública, Universidade do Porto
Laboratório para a Investigação Integrativa e Translacional em Saúde Populacional (ITR)

1st Lab Meeting | 7th March 2022

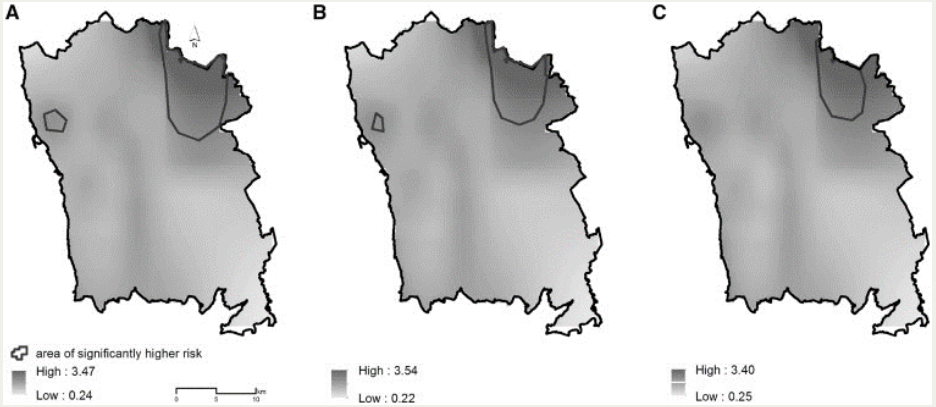
Origins of epidemiology



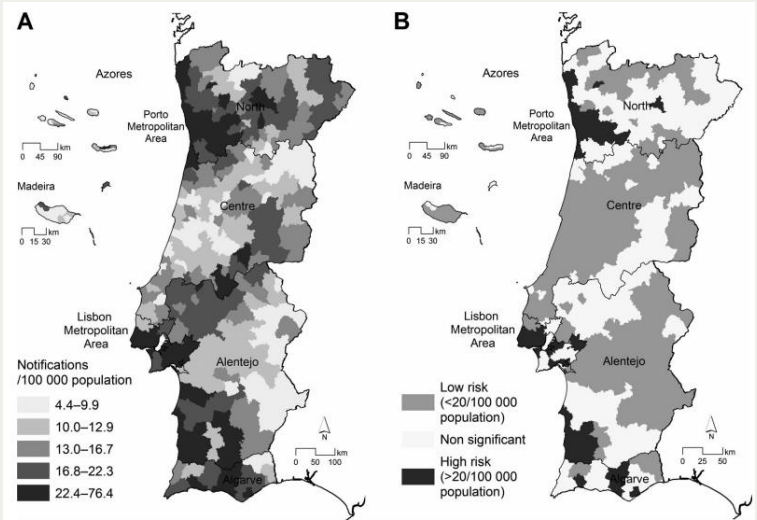
Original map made by John Snow in 1854. Map of the book "On the Mode of Communication of Cholera" by John Snow, originally published in 1854 by C.F. Cheffins, Lith, Southhampton Buildings, London, England.



Geographic disparities in health



Spatial distribution of the odds ratio of obesity at 7 years of age across Porto Metropolitan Area (G21)
Int J Epidemiol. 2020 Jun 1;49(3):934-943. doi: 10.1093/ije/dyz205.



Spatial distribution of A) tuberculosis-standardised notification rates and B) location of municipalities with higher/lower notification rates, Portugal, 2010–2014
The International Journal of Tuberculosis and Lung Disease, Volume 21, Number 7, 1 July 2017, pp. 784-789(6)

Neighbourhood effects

‘Zip code better predictor of health than genetic code’

https://www.hsph.harvard.edu/news/features/zip-code-better-predictor-of-health-than-genetic-code

Eco-social model

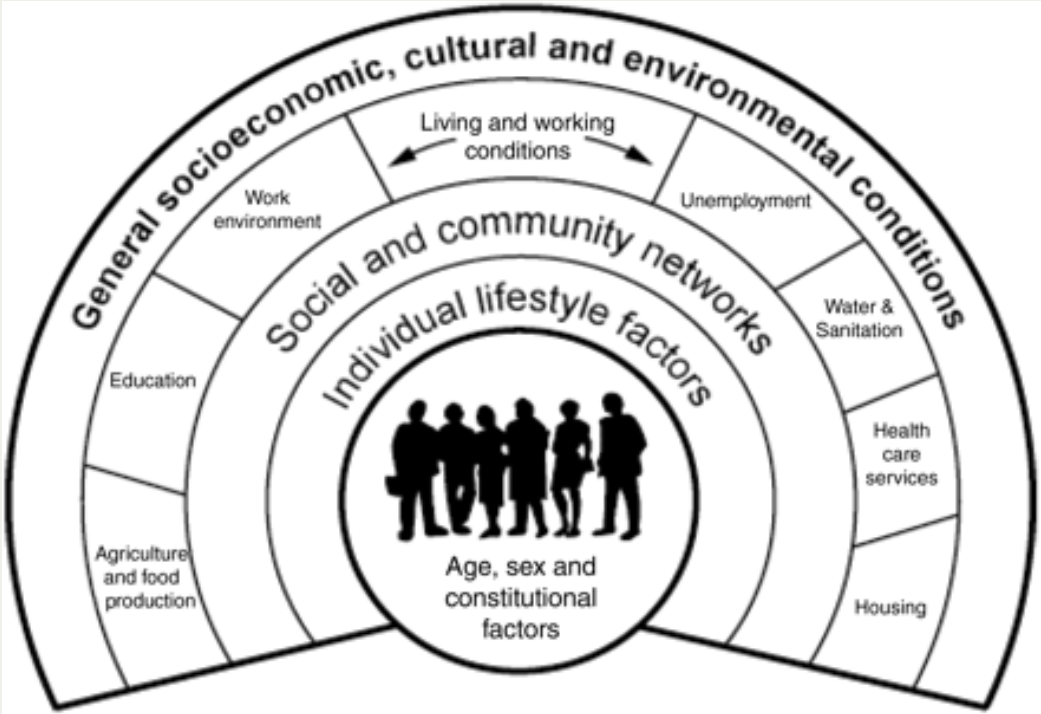


Diagram Source: Oxford Journals, Health Policy and Planning
(http://heapol.oxfordjournals.org/content/23/5/318/F1.expansion)

Research objectives

- The Geospatial Health Lab investigates how population health is affected by the geographical context.
- Our goal is to generate evidence to guide policies towards the creation of healthy and inclusive places.
- We are particularly interested in the health effects of neighbourhood social and physical environment and in emerging health risks such as climate change and environmental degradation.
- Our investigation relies on longitudinal cohort data and small-area statistics and uses Geographical Information Systems (GIS), remote sensing and spatial statistics as core tools.

People

Coordinator
Ana Isabel Ribeiro, PhD

PhDs
Gloria Macassa, MD PhD (Gävle Uni)

PhD Students
Cláudia Santos, MPH
Diogo Almeida, MD
Sandra Moutinho, MS (FLUP)

Technicians
Ema Fortunato

Master Students
Daniela Maciel (ESS IPP)
Marieke Behlen (ISPUP/München Uni)

Public Health Specialization Course
Carlos Magalhães, MD
José Barros, MD

Other
Filipa Silva, MD

Funded projects

2021/2024 – **HUG: The health impacts of inner-city gentrification, displacement and housing insecurity: a quasi-experimental multi-cohort study** (PTDC/GES-OUT/1662/2020)
Funding: 239.300,75€
Role: Principal Investigator (PI)

2018/2021 – **EXALAR 21: The influence of exposure to urban air pollutants, green and blue spaces, and biodiversity on the development of allergic diseases and asthma in children** (PTDC/GES-AMB/30193/2017)
Funding: 236.755,13€
Role: Principal Investigator (PI)

Scientific Employment and PhD Grants

- **Ageing and Place: How does neighbourhood environment shape the ageing trajectories in Europe?** Researcher: Ana Isabel Ribeiro. Scientific Employment (2020-2026). Ref: CEECIND/02386/2018

- **Neighbourhood socioeconomic processes and dynamics and healthy ageing: a study based on the EPIPorto cohort.** Doctoral Program in Public Health. Faculty of Medicine University of Porto. Student: Cláudia Jardim Santos (2020-2024). Ref: UI/BD/150782/2020

- **Distribuição espaciotemporal e determinantes da incidência de doenças transmitidas por mosquitos em Portugal.** Programa Doutoral em Geografia. Faculdade de Letras da UP. Student: Sandra Moutinho (2020-2024). Ref: 2020.07201.BD

Other ongoing research projects / topics

- Neighborhood Contexts and health using ISPUP cohort data
- Urban environment and physical activity (collaboration with CIAFEL, Paula Santos & Andreia Pizarro)
- Climate change adaptation and public health in Porto (with Gloria Macassa and José Silva)
- Blue Spaces and healthy ageing (in collaboration with ESS IPP)
- Longitudinal Area Network & Datalink (LAND) (coordinator Emily Taylor Murray UCL, UK)
- Local Burden of Disease Collaboration (IHM)

Colaborations with other labs

- Epidemiology of Allergic Conditions (PI André Moreira)
- Epidemiology of Mycobacteria Infection, HIV and other Sexually Transmitted Infections (PI Raquel Duarte)
- Social Adversity and Health Inequalities (PI Silvia Fraga)
- Policies and Health (PI Teresa Leão)
- Perinatal Determinants of Health (PI Henrique Barros)
- Population Design of Musculoskeletal Health and Disease (PI Raquel Lucas)

Metrics of scientific productivity (2018-2020, SCOPUS)

- Average no. publications\year (N=15)
- Percentage in Q1 or Q2 (85%)
- Average no. citations\year (N=351)
- Average Altmetric score (~70)
- Concluded master/PhD thesis (N=2)

SWOT Analysis

s

- Strongly aligned with SDG
- Funds until 2026
- Collaborations within and outside ITR (international inclusively)
- Strongly interdisciplinary

w

- Young and small lab
- Only two PhDs (1 outside Portugal)
- National scientific networks on the field are limited
- Limited capacity to attract master students

o

- Expanding research field
- Research funds on the field (e.g. climate change, cities and health, etc.)
- Course offering
- Consultant work

t

- Coordinator has a temporary position
- Lack of funds for science projects and scientific employment

Future Prospects

- Hire 3 researchers in the scope of HUG project
- 3 PhDs concluded
- Maintain the publication volume
- Capture national and international funds (as PI)
- Attract two more PhD Students (funded preferably)
- Attract more Master Students
- Keep collaborating with other ITR research units and labs
- Increase international collaborations (e.g. Spain, UK, USA)
- Be more present in decision making processes (e.g. scientific dissemination, projects, local health plans, etc.)

Acknowledgments

This research was funded by FEDER through the Operational Programme Competitiveness and Internationalization and national funding from the Foundation for Science and Technology – FCT (Portuguese Ministry of Science, Technology and Higher Education) under the Unidade de Investigação em Epidemiologia - Instituto de Saúde Pública da Universidade do Porto (EPIUnit) (UIDB/04750/2020) and under the research project HUG (PTDC/GES-OUT/1662/2020).

Ana Isabel Ribeiro was supported by National Funds through FCT, under the programme of 'Stimulus of Scientific Employment – Individual Support' within the contract CEECIND/02386/2018.

COMPETE
PROGRAMA OPERACIONAL FACTORES DE COMPETITIVIDADE

QUADRO DE REFERÊNCIA ESTRATÉGICO NACIONAL
PORTUGAL 2007.2013

UNIÃO EUROPEIA
Fundo Europeu de Desenvolvimento Regional

FCT
Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR