Abstract citation ID: ckae144.023
How was the impact of heatwaves on daily hospital admissions in Portugal (2000-2018)?

Ana Margarida Alho

A Alho[1,2], AP Oliveira[3,4], S Viegas[2], P Nogueira[5,6,7]
[1]ULS Santa Maria, Public Health Unit Francisco George, Lisbon, Portugal
[2]NOVA National School of Public Health, Comprehensive Health Research Center, NOVA University Lisbon, Lisbon, Portugal
[3]CoLAB + ÂTLANTIC, IPL-ESTM, Peniche, Portugal
[4]Centro de Estudos Geográficos, Instituto Geografia e Ordenamento do Território, Universidade de Lisboa, Lisbon, Portugal
[5]Instituto de Saúde Ambiental, Faculdade de Medicina Universidade de Lisboa, Lisbon, Portugal
[6]Laboratório para a Sustentabilidade do Uso da, Terra e dos Serviços dos Ecossistemas – TERRA, Lisbon, Portugal
[7]CIDNUR, Escola Superior de Enfermagem de Lisboa, Lisbon, Portugal
Contact: margarida.alho@arslvt.min-saude.pt

Background: Climate change has increased the frequency, intensity, and duration of heatwaves, posing a serious threat to public health. While the link between high temperatures and premature mortality has been extensively studied, the comprehensive quantification of heatwave impacts on morbidity remains understudied.
Methods: We assessed the relationship between heatwaves and daily hospital admissions at a county level in Portugal, considering all major diagnostic categories and age groups, over a 19-year period from 2000 to 2018. Our nationwide study included a comprehensive geospatial analysis, integrating over 12 million hospital admission records with heatwave events indexed by the Excess Heat Factor (EHF), covering all 278 mainland counties. To estimate the impact of heatwaves on hospital admissions, we applied negative binomial regression models at both national and county levels.
Results: A statistically significant overall 18·9% increase in daily hospital admissions was found during heatwave days (IRR=1·189, 95% CI: 1·179-1·198). This impact affected all age groups, with pediatric ages being the most affected (21·7%), followed by the working-age (19·7%) and elderly individuals (17·2%). All 25 Major Disease Diagnostic Categories experienced significant increases, particularly Burns (34·3%), Multiple Significant Trauma (26·8%), and Infectious and Parasitic Diseases (25·4%). Notable rises were also observed in Endocrine, Nutritional, and Metabolic (25·1%), Mental (23%), Respiratory (22·4%), and Circulatory (15·8%) diseases.
Conclusions: Our results provide statistically significant evidence of the association between heatwaves and increased hospitalizations across all age groups and for all major causes of disease. This is the first study to estimate the full extent of heatwaves' impact on hospitalizations using the EHF index over a comprehensive 19-year period, encompassing an entire country, and spanning 25 disease categories during multiple heatwave events.
Key messages:
- There is a clear association between heatwaves and increased hospital admissions across all age groups and Major Diagnostic Categories.
- Our data offer crucial information to guide policymakers in effectively and efficiently allocating resources to address the profound healthcare consequences resulting from climate change.