

Investigating socio-spatial hearing health inequality in Cheshire and Merseyside Integrated Care System (ICS) to support evidence-based policy making

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The issue:

Hearing loss is one of the most challenging public health issues; ^{1,2} it is estimated that it currently affects over 9 million adults in England and costs the English economy over £25 billion annually in loss of productivity and unemployment.³ The impact of hearing loss does not end with a person's ability to hear, as commonly believed; hearing loss impacts the quality of life, mental health, work, education, family life, communication, and social life.⁴ In addition, hearing loss increases health and social care costs as it is linked to multiple chronic health conditions, ⁵ including depression ⁶ and dementia.⁷

Currently, the severity of hearing loss in England and the local hearing health needs are roughly estimated on projected age demographics based on audiological data collected 40 years ago and not on actual health needs. The accuracy of these estimates has never been validated with real-world data, yet still inform the local hearing health needs. ⁸

Recent compelling evidence revealed vast differences in hearing loss prevalence among adults with similar age profiles, driven by socioeconomic position ^{5,9} and place of residence. ^{8,10} Due to the link of hearing loss with cognitive decline ⁷ and poor mental health, ⁶ understanding the severity of hearing loss at the population level is paramount. ⁴ Hearing loss is the largest potentially modifiable risk factor for dementia, and developing an in-depth understanding of local needs is important for the health of the residents of Cheshire and Merseyside.

This project **aims to:**

- a) quantify for the first time the severity of hearing loss using real-world evidence from Cheshire and Merseyside primary care, and
- b) investigate potential localised patterns and differences from the current NHS hearing loss prevalence estimates.

We will investigate socio-spatial hearing health inequality by using anonymised longitudinal medical records through System P, the programme currently being delivered across Cheshire and Merseyside.

Deliverables:

1. **Scientific paper** and **policy briefs** for dissemination of findings.
2. A **policy-facing event**.
3. **Narrative short film**

Expected Impact:

Local scale– Work with stakeholders from the Cheshire & Merseyside Integrated Care System through System P Programme

This project supports the key strategic aims and objectives of the [Cheshire and Merseyside Health and Care Partnership Strategy 2023-2028](#) in assessing the health needs of the population, developing a sustainable integrated health and care system, and reducing health inequalities. The project's importance is further highlighted by the fact that hearing capacity is at the core of the [Integrated Care for Older People \(ICOPE\)](#) approach, together with cognitive decline and limited mobility.

Using population health intelligence, research and engagement we aim to better understand local needs. The proposed project will first utilise real-world hearing data from primary care records and not projections through population demographics. We have already identified all read codes used in primary care to

classify a person as hearing impaired, and we will quantify for the first time the actual severity of hearing loss in the population using anonymised aggregated data. Advancing our knowledge of people's hearing health will inform health policy-making for planning sustainable integrated care models across Cheshire and Merseyside to meet the multi-faceted needs of local people who belong to the 'Frailty and Dementia' segment.

Regional scale– Work with stakeholders from the NIHR Applied Research Collaboration (ARC) North West Coast

According to recent evidence from a nationally representative sample from the English Longitudinal Study of Ageing (ELSA),¹⁰ the burden of hearing loss in the North West is one of the highest in England. Insights from this project will inform the need for a re-evaluation of the actual hearing health needs of the population, expanding the strengths of the data intelligence to the whole region and leading to important health policy impacts.

National scale– Work with stakeholders from the National Disease Registration Service, NHS Digital

Advancing our knowledge of the current NHS hearing data's appropriateness for planning sustainable hearing care models through this study will be highly important. The analysis of hearing loss prevalence will inform the NHS England and the Department of Health's health policy strategies, particularly regarding the new governmental programme, 'Action Plan on Hearing Loss'. The project aims to achieve national impact by including hearing health indicators in the Public Health Outcomes Framework¹¹ that can be systematically collected, analysed and interpreted to inform local health needs.

International scale– Work with stakeholders from the World Hearing Forum of the World Health Organization

The study will inform global hearing health policy and practice: all countries globally use population's age demographics and not actual epidemiological data to inform hearing loss prevalence estimates and their national hearing health policies. Validation for the first time of the novel 'socio-spatial concept'^{8,10} in hearing loss prevalence through real-world data will support policy change to modernise public health data surveillance and analytics globally. Dr Tsimpida (PI) is an internationally recognised research leader in the area of public health policy-making for hearing health, a member of the Core Committee of the World Health Forum, and a Senior Advisor of the World Health Organization. Insights from this project will feed on WHO consultancy work she currently undertakes to inform national strategies, policies and plans regarding the surveillance of the hearing health of the populations.

References

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