

Cyflwynwyd yr ymateb i ymgynghoriad y [Pwyllgor Iechyd a Gofal Cymdeithasol](#) ar [dyfodol ymarfer cyffredinol yng Nghymru](#)

This response was submitted to the [Health and Social Care Committee](#) consultation on [the future of general practice in Wales](#)

GP28 : Ymateb gan: | Response from: Professor Mitchel Langford and Professor Gary Higgs

---



# **Evidence submitted by Professor Mitchel Langford and Professor Gary Higgs to the Senedd Health and Social Care Committee inquiry into the future of general practice in Wales**

GIS Research Centre, Wales Institute of Social and Economic Research and Data (WISERD), Faculty of Computing, Engineering and Science, University of South Wales, Pontypridd CF37 1DL, UK; [REDACTED] (Mitchel Langford)  
[REDACTED] (Gary Higgs)

## **1. Summary**

1.1 We are responding to a call for evidence into the future of general practice in Wales by the Senedd Health and Social Care Committee. Much of the evidence for our submission has been gathered from an analysis of geographical variations in access to general practice (GP) services in Wales. This draws on publicly available sources of data on the supply of surgery locations, the numbers of GPs in each practice and the characteristics of surgeries (such as opening times) to examine spatial patterns of accessibility.

1.2 On-going research in the Geographical Information Systems (GIS) Research Centre at the University of South Wales has involved the use of innovative approaches to examine such supply-side parameters in relation to the potential demand for primary health services across Wales. This incorporates the potential means of accessing such services (including private and public transport) and demonstrates the need to provide a full picture of spatial and social equity of provision in Wales to help understand overall patterns of access to such services.

## **2. Key messages**

2.1 The main aim of our research has involved investigating the use of spatial analytical approaches to measure geographical variations in access to health and social services in Wales (Langford and Higgs, 2006; Langford et al., 2016). This has involved an analysis of primary health care and more recently access to services with implications for health and social care such as access to warm spaces (Price et al., 2023) and residential and nursing places in long term care homes (Higgs et al., 2022; Higgs and Langford, 2025). We draw on GIS approaches to measure geographical variations in potential access to such services across Wales.

2.2 The methods are described in more detail in the papers referenced below but in summary this involves developing access measures that include supply-side characteristics (the location of the practice and its characteristics) in relation to potential

demand (based on the age or health profiles of potential users) whilst accounting for distances travelled. Variations in supply-demand scores are then compared with measures of social disadvantage such as the Welsh Index of Multiple Deprivation (WIMD) to help understand the implications for spatial patterns in access (Page et al., 2018).

### **3. The role of geographical approaches to measuring access**

3.1 The main points we feel are relevant to the work of the Senedd Committee arising from our research relating to geographical patterns of access to health services across Wales are:

1. Our initial analysis was based on the use of private means of transport, and road drive times, to explore spatial and temporal trends in provision. Subsequent analysis demonstrated the importance of extending this analysis by including measures of public transport availability to provide a fuller picture (Higgs et al., 2017).
2. The flexibility of the approach enables patterns to be examined across ‘traditional’ administrative zones by including measures of travel distance that account for the barriers involved in accessing primary care for communities lacking services or the means to access surgeries. This goes beyond simplistic counts of the numbers of practices in an area to provide more sophisticated measures using networking approaches.
3. This research has been further extended to demonstrate how GIS tools might be used to examine patterns of access within the ‘windows of opportunity’ offered by the opening times of GP practices. This identified significant gaps in provision across Wales in evening and weekend provision of surgery appointments available at practice locations (Higgs et al., 2019).
4. More recently, our research has shown how such access measures for service locations in other sectors (such as banking) can be integrated with bus service availability using publicly available scheduled timetable data (Langford et al., 2022). On-going research is exploring the potential of including public transport availability to provide a more complete picture of variations in access to a wider range of services including GP surgeries. This in turn calls for a holistic approach that incorporates such analysis in the design of public transport services (for example in the regional transport plans being developed in the lead up to bus franchising in Wales) that incorporates the opening times of practices and bus timetabling to consider overall patterns of access to health services.
5. Such analysis has in turn highlighted the importance of suitable data sources of health, transport and population demand data at detailed spatial scales – there is a real need for spatially and longitudinally consistent data sets to be made available to provide a fuller picture of geographical variations in access and to track changes over time. An important recommendation to the Committee therefore concerns the need

for collating and retaining data that helps provide a fuller picture of past, present and future variations in access to primary care in Wales.

#### **4. Conclusion**

4.1 An analysis of changes in geographical patterns in access has the potential to provide evidence regarding the influence/impact of policy interventions and helps to identify potential inequality in relation to a wider range of social and health measures. The inclusion of such measures helps to provide a fuller picture of patterns of potential access to general practices in Wales. However, an important advancement of our research is the inclusion of indicators of public transport availability within such models. In those urban and rural areas with potentially vulnerable groups lacking transport options, who may lack the means of accessing health services through virtual means, more research is needed to fully understand the impacts of spatial patterns in the availability of GP practice services for the equity of provision as well as the potential impact on health outcomes.

#### **References**

HIGGS, G. and LANGFORD, M. (2025) 'Geographical and temporal variations in the provision of registered older people long term care home places in Wales', *International Journal of Care and Caring*, 1–19, DOI: 10.1332/23978821Y2024D000000045

HIGGS, G., LANGFORD, M., JARVIS, P., RICHARD, J., PAGE, N, and FRY, R. (2019) 'Using GIS to investigate variations in accessibility to 'extended hours' primary health care provision', *Health and Social Care in the Community*, 27(4), 1074-1084. <https://doi.org/10.1111/hsc.12724>

HIGGS, G., LANGFORD, M. and LLEWELLYN, M. (2022) 'Towards an understanding of inequalities in accessing residential and nursing home provision: the role of geographical approaches', *Health and Social Care in the Community*, 30(6), 2218– 2229. <https://doi.org/10.1111/hsc.13770>

HIGGS, G., ZAHNOW, R., CORCORAN, J., LANGFORD, M. and FRY, R. (2017) 'Modelling spatial access to General Practitioner surgeries: Does public transport availability matter?', *Journal of Transport and Health*, 6, 143-154. <https://doi.org/10.1016/j.jth.2017.05.361>

LANGFORD, M. and HIGGS, G. (2006) 'Measuring Potential Access to Primary Healthcare Services: The Influence of Alternative Spatial Representations of Population', *The Professional Geographer*, 58(3), 294-306. <https://doi.org/10.1111/j.1467-9272.2006.00569.x>

LANGFORD, M., HIGGS, G. and FRY, R. (2016) 'Multi-modal Two-Step Floating Catchment Area Analysis of Primary Health Care Accessibility', *Health and Place*, 38, 70-81. <https://doi.org/10.1016/j.healthplace.2015.11.007>

LANGFORD, M., PRICE, A. and HIGGS, G. (2022) Combining Temporal and Multi-Modal Approaches to Better Measure Accessibility to Banking Services, *ISPRS International Journal of Geo-Information*, 11, 350. <https://doi.org/10.3390/ijgi11060350>

PAGE, N., LANGFORD, M. and HIGGS, G. (2018) 'An evaluation of alternative measures of accessibility for investigating potential 'deprivation amplification' in service provision', *Applied Geography*, 95, 19-33. <https://doi.org/10.1016/j.apgeog.2018.04.003>

PRICE, A., HIGGS, G. and LANGFORD, M. (2023) 'Spatial and temporal access to warm spaces during the winter of 2022/2023', *Environment and Planning B: Urban Analytics and City Science*, 50(8), 2317-2321. <https://doi.org/10.1177/23998083231196397>

*The Health and Social Care Committee is holding an inquiry into the future of general practice in Wales, including consideration of:*

- *Challenges threatening the sustainability of general practice, including:*
  - o *the funding model for general practice and current financial pressures,*
  - o *the efficacy of different models for managing general practice,*
  - o *the suitability and maintenance of general practice estates and access to digital technology;*
- *The general practice workforce, including workforce planning, the recruitment of new staff into general practice, the retention of experienced staff, staff workload and wellbeing, training and continuing professional development, and the growth of the multidisciplinary team;*
- *The patient experience of general practice, including equitable access to care, effective management of patient demand, the quality of care, and public trust in the services provided;*
- *Opportunities to improve general practice to make it fit for the future and take a more preventative approach to care.*

*Along with your submission, you should provide the following information:*

*Your name and contact details as the person, or organisation, submitting the evidence.*

*Whether your evidence is submitted as an individual, or on behalf of an organisation.*

*If you are submitting evidence as an individual, confirmation that you are over 18 years old.*

*If you are under 13 years old, your parent or guardian's agreement that you can participate (this can be provided via email).*

*Confirmation of whether you would prefer that your name is not published alongside your evidence (names of individuals under 18 years old will not be published).*

*Confirmation of whether you would like the Committee to treat any or all of your written evidence as confidential, with reasons for the request.*

*If you have referred to a third party in your evidence, such as a parent, spouse or relative, confirmation that they have agreed that you can share information that may be used to identify them and that they understand that it will be published.*