Written evidence submitted by Dr Liz Brewster, Dr Michael Lambert, Dr Luigi Sedda, Mr Barry Rowlingson, Dr Cliff Shelton and Professor Jo Rycroft Malone (RTR(RTR8)

Profile and Reason for Submission

We are an interdisciplinary academic research team at Lancaster University based in the Faculty of Health and Medicine and the Centre for Alternatives to Social and Economic Inequalities (CASEI). We are currently working on a Stage 2 National Institute for Health Research (NIHR) Health and Social Care Delivery Research (HS&DR) proposal, to be assessed by the NIHR in March 2022. This proposal, entitled *Mapping underdoctored areas: the impact of medical training pathways on NHS workforce distribution and health inequalities,* directly speaks to the questions asked in this Health and Social Care Committee of Inquiry on Workforce: recruitment, training and retention in health and social care.

The research team is led by Dr Liz Brewster and comprises Dr Michael Lambert, Dr Luigi Sedda, Mr Barry Rowlingson, Dr Cliff Shelton and Professor Jo Rycroft-Malone.

Dr Brewster is a Senior Lecturer in Medical Education. She is directly involved in the design and delivery of Lancaster Medical School's MBChB curriculum which trains 129 medical students every year. Her research as part of NHS England funded studies about quality, safety and patient centred care have directly informed healthcare service delivery at a national level. She currently supervises an NIHR-funded clinical doctoral fellow researching recruitment and retention in emergency medicine.

Dr Lambert is a Postdoctoral Fellow in Social Inequalities. He is a historian of with expertise of constructing complex layered local case studies in both health and social care from archival and oral history sources. He has submitted written and oral evidence to previous Parliamentary inquiries based on this research.

Dr Sedda a Senior Lecturer in Spatial Epidemiology and Director of Engagement. He has published widely on mapping diseases and their spread, and previously worked with UKMED data to conduct geospatial analysis of the movements of doctors from the family home to medical school in the UK.

Mr Rowlingson is a Research Fellow. His extensive experience of applying spatiotemporal mapping and understanding of health inequalities in this context have driven forward important questions in this research proposal, notably around how available data can be harnessed to inform future practice.

Dr Shelton is a Senior Clinical Lecturer, Director of Clinical Skills and Simulation, and Consultant in Anaesthesia with Manchester University NHS Foundation Trust. His existing role in Postgraduate Medical Education and Training and accreditation by HEE and the GMC as an educational and clinical supervisor have informed the current research proposal by foreground the relationships between teaching requirements, specialisation and service needs.

Professor Rycroft-Malone is an internationally recognised expert in mixed methods applied health research and implementation science. She has extensive experience of leading national and international multi-site research with relevance to the delivery of healthcare services and contributes to the project as a mentor for senior and junior researchers alike.

1. Executive Summary

1.1. This written submission provides evidence derived from existing exploratory research which informs the basis of the NIHR proposal. This speaks directly to question 11 in the terms of reference, but also indirectly to questions 2 and 6.

> 2. What is the best way to ensure that current plans for recruitment, training and retention are able to adapt as models for providing future care change?
>
> 6. To what extent is there an adequate system for determining how many doctors, nurses and allied health professionals should be trained to meet long-term need?
>
> 11. Are there specific roles, and/or geographical locations, where recruitment and retention are a particular problem and what could be done to address this?

1.2. The key points responding to the above questions from this exploratory research are:

1.3 **There is a symbiotic relationship between the geographic distribution of medical education, the recruitment and appointment of doctors, retention, service provision and quality, and clinical specialisation.** Each of these issues are compounding, leading areas which become 'underdoctored' to remain so despite limited interventions. This is a process rather than an event and contributes over time to a circle of reinforcement which causes the maldistribution of services, clinical specialisms, and quality at a national level. Any consideration of workforce distribution at a local level cannot be understood in isolation and requires a joined-up policy approach.

1.4. **There is a clear relationship between 'underdoctoring' and other detrimental outcomes in relation to population health, shaped by locality and socio-economic issues which accumulate over time**. These include a range of health inequalities, health service quality, delivery, and performance, and wider population outcomes. This applies to primary, secondary, and tertiary health services. Other associated professional groups including nursing, dentistry, pharmacy, and allied health professions also have issues in ensuring adequate staffing levels, but the quality and quantity of medical workforce remains the primary determinant for understanding consequences of 'underdoctoring' in under-served areas. Inequalities are inadvertently embedded in access to healthcare.

1.5. **The distribution of the medical workforce and local health service provision is shaped by the organisation of medical training at undergraduate and postgraduate levels**. Where doctors choose to work is more than just a matter of personal preference and shaped by organisational and training structures which accrue and reinforce over time. This in turn, leads to the recruitment and retention of fewer doctors in terms of quality and quantity in socio-economically deprived areas where they are most needed at a national policy level. 'Underdoctoring' is more than an issue of medical workforce supply and demand requiring rebalancing; it is one of the organisational relationship between medical education at all levels and the provision of health services to patients.

1.6. We can provide further written or oral evidence upon request.

2. 'Underdoctoring' and the National Health System

2.1. There is a symbiotic relationship between the geographic distribution of medical education, the recruitment and appointment of doctors, retention, service provision and quality, and clinical specialisation. Each of these issues are not discrete variables but compounding relationships which lead areas which become 'underdoctored' to remain so over time despite a spectrum of national and local policy interventions. Equally, this also means that areas with oversubscription for medical training places and more competitive applications for senior clinical roles remain consistently better served over time. Although recruitment and retention are international issues, a recent Cochrane Review, , concluded that there is 'currently limited reliable evidence regarding the effects of interventions aimed at addressing the inequitable distribution of health professionals'.[1] Our NIHR HS&DR proposal will analyse this issue and provide implementable recommendations regarding intervention design for workforce redistribution.

2.2. Workforce issues remain unresolved and deeply embedded in the structures and organisation of the NHS despite its long history, and reorganisation. Recurrent policy decisions have failed to turn a 'patchwork of provision into a quilt' as suggested by Peter Hennessy.[2] Preliminary archival research, confirmed by geospatial analysis, suggests that at a regional level, places which were 'underdoctored' before 1948 broadly continued to be afterwards. As Nick Timmins argues, this is because the NHS is 'not one organisation but many hundreds… Each has its own history, culture and local circumstances'.[3] Workforce distribution within the NHS is a process rather than an event and contribute over time to a circle of reinforcement which causes the maldistribution of services, clinical specialisms, and quality at a national level.

2.3. Any consideration of workforce needs cannot be understood in isolation and requires a joined-up policy approach. For instance, major policy changes and structural reorganisations cannot be considered without regard to the organisation of medical education. This, in turn, hinges upon appropriate clinical and academic facilities related to teaching, research and specialisation to be available across relevant organisations. These require resourcing of both staff and equipment which accrue over time and develop based on performance, prestige and personnel. These interconnections inform either service expansion or rationalisation, with the logic of 'subsuming peripheral services in the interests of the centre of excellence'.[4] The outcome of this consideration is that some of the core ideals underpinning the NHS including universality, equity and access, are being undermined through a discrete rather than systemic approach to understanding workforce issues.

3. 'Underdoctoring' and Health Inequalities

3.1. There is a clear relationship between 'underdoctoring' and population health outcomes , shaped by locality and socio-economic issues which accumulate over time. Established evidence demonstrates that health issues are more prevalent in areas of socio-economic deprivation and that structural inequalities increase the risk of developing health problems.[5,6] Similar evidence highlights that, moreover, areas with socio-economic deprivation possessing greater care burdens also experience greater difficulties in the availability, quality, and delivery of health services.[7,8] Although well-established in Julian Tudor-Hart's inverse care law in primary care,[9] our exploratory research suggests that this equally applies to secondary and tertiary services.

3.2. Access to care relies on there being enough doctors in an area to deliver services. Evidence that socio-economically deprived areas struggle to recruit doctors to serve the local population can be seen across applications for medical training places, with 'underdoctored' areas having the lowest speciality fill rate and oversubscribed areas being those with existing capacity.[10,11] This issue has been identified by Health Education England, noting that 'medical training posts have been distributed across England based on historical arrangements and this has not fully aligned with the current or future health needs of local populations'.[12] This is reaffirmed in the geographical distribution of locum doctors, demonstrating difficulties in recruiting and retaining staff which are more expensive to implement and costly to overcome.[13] These also have ramifications in relation to quality.[14] Ultimately workforce issues are crucial in thinking about addressing health inequalities and population approaches to health policy; both of which direct current thinking in NHS England and the Department of Health and Social Care, along with being a central pillar of 'levelling up' public services in the view of the House of Lords Public Services Committee.

3.3. Although other associated professional groups including nursing, dentistry, pharmacy, and allied health professions also have issues in ensuring adequate staffing levels, the quality and quantity of clinicians over time remains the primary determinant for understanding consequences of 'underdoctoring' in under-served areas. The causes of poor health and avoidable mortality are manifold, but providing better access to care is one aspect of a solution to the enduring problem of health inequalities. The 2017 allocation of 1500 additional medical student places recognised this impact on inequalities, aiming to ensure 'sufficient supply of doctors in all areas'.[15] This has not been realised as the 2021 annual report of the Chief Medical Officer still identifies deeply rooted clinical workforce shortages which reverberate across local health economies, particularly in socio-economically deprived coastal communities.[16] Researching and understanding the structural determinants of 'underdoctoring' and their impact on health inequalities in a more relational and systematic way is therefore crucial to developing sustaining health services which deliver for local populations in the future.

4. 'Underdoctoring' and Medical Education

4.1. The distribution of the clinical workforce and local health service provision is shaped by the organisation of medical training at undergraduate and postgraduate levels. Where doctors choose to work is more than just a matter of personal preference and shaped by organisational and training structures which accrue and reinforce over time. There is an established relationship between where doctors train and work based on cohort-level surveys,[17,18] some of which historically informed regional or national workforce planning modelling.[19,20] In addition, a range of discreet choice studies have identified a range factors on individual decision-making by clinicians at key junctures in their undergraduate training and postgraduate placements with regards to location and specialist.[21-25] However, these fail to account for structural factors and real-world decisions, framing the issue as one of professional mobility and individuality rather than shaped by structural determinants. Where doctors choose to work is more than just a matter of personal preference and is often termed the 'dual agenda', reflecting both individual aspirations within an organisational workplace whilst understanding their bounds and constraints.[26] 'Underdoctoring' and its opposite manifestation reflect this dynamic interrelationship as it has developed over time.

4.2. 'Underdoctoring' is a reinforcing process which leads to the recruitment and retention of fewer doctors in terms of both quality and quantity in the most socio-economically deprived areas over time which further embeds issues of access to healthcare. Here, incentives as a short-term policy solution – offering improved and flexible working conditions, remuneration, or enhanced access to research and education – have all shown to be unable to overcome the entrenched and cumulative barriers imposed by historic 'underdoctoring' over time.[27-30] Such efforts have also been undermined by organisational and policy churn within the NHS at national and local levels which has intensified over time.[31,32] 'Underdoctoring' as a workforce issue then, is a compounding problem situated in place over time which requires longer-term attention rather than as part of other policies or subsumed within organisational changes.

4.3. Health and health service inequalities have increased and intensified during the Covid-19 pandemic, rendering the symbiotic interrelationships more visible. Declining numbers of GPs, rising waiting lists , and their consequences for patient care have been vocalised during the course of the pandemic.[33,34] Equally, the need to protect the NHS both nationally, and locally with the emergence of different variants over time was felt unevenly across the NHS. The suspension of other hospital services owing to the need for beds or staffing was felt most keenly in 'underdoctored' areas; notably each of the case study sites proposed by our study including Lincolnshire, Morecambe Bay, Blackpool and areas of the north east .[35-37] These issues have been worsened by a slower decline in case rates across these areas, along with higher morbidity and mortality, combined with an intensification of socio-economic deprivation.[38-40] Enduring and cumulative legacies of 'underdoctoring' shaped by the organisation of medical education have, therefore, become more visible during the course of the Covid-19 pandemic and its consequences for health inequalities.

5. Conclusion

5.1. This written submission provided evidence in relation to 'underdoctoring' as an issue of health and health service inequalities which accumulate over time based on exploratory research underpinning a Stage 2 NIHR HS&DR proposal, to be assessed by the NIHR in March 2022.

5.2. The key points of this research for the purposes of the inquiry are:

5.3 **There is a symbiotic relationship between medical education, the recruitment and appointment of doctors, retention, service provision and quality, and clinical specialisation.** Any consideration of workforce needs cannot be understood in isolation and requires a joined-up policy approach.

5.4. **There is a clear relationship between 'underdoctoring' and other detrimental outcomes in relation to population health, shaped by locality and socio-economic issues which accumulate over time.** The quality and quantity of clinicians over time remains the primary determinant for understanding consequences of 'underdoctoring' in under-served areas.

5.5. **The distribution of the clinical workforce and local health service provision is shaped by the organisation of medical training at undergraduate and postgraduate levels.** 'Underdoctoring' is more than an issue of the clinical workforce supply and demand requiring rebalancing; it is one the organisational relationship between medical education and the provision of health services to patients. This has become more evident during the course of the Covid-19 pandemic.

January 2022

6. References

1. Grobler L, Marais BJ, Mabunda S. Interventions for increasing the proportion of health professionals practising in rural and underserved areas. Cochrane Database Syst Rev. 2015; 2015(6).

2. Hennessy P. Never again: Britain, 1945-51. London: Penguin; 2006.

3. Timmins N. The chief executive's tale: views from the frontline of the NHS. London: King's Fund; 2016.

4. Lambert M. The virtues of decentralisation for health services in crisis [Internet]. History and Policy: Policy Papers. 2021. Available from: https://www.historyandpolicy.org/policy-papers/papers/the-virtues-of-decentralisation-for-health-services-in-crisis.

5. Haynes RM. The geography of health services in Britain. London: Croom Helm; 1987.

6. Marmot M, Allen J, Boyce T, Goldblatt P, Morrison J. Health equity in England: The Marmot Review ten years on. London; 2020.

7. Nussbaum C, Massou E, Fisher R, Morciano M, Harmer R, Ford J. Inequalities in the distribution of the general practice workforce in England: a practice-level longitudinal analysis. BJGP Open. 2021;BJGPO.2021.0066.

8. Scobie S, Morris J. Quality and inequality: digging deeper [Internet]. Nuffield Trust Briefing. 2020 [cited 2021 Oct 26]. Available from: https://www.nuffieldtrust.org.uk/resource/quality-and-inequality-digging-deeper.

9. Tudor Hart J. The inverse care law. Lance. 1971;297(7696):405-12.

10. Health Education England. Training in smaller places. London; 2016.

11. The UK Foundation Programme. 2020 recruitment stats and facts report [Internet]. London; 2020. Available from: https://foundationprogramme.nhs.uk/resources/reports/.

12. Health Education England. Supported from the start; ready for the future; The Postgraduate Medical Foundation Programme Review [Internet]. London; 2019. Available from: https://www.hee.nhs.uk/sites/default/files/documents/FoundationReview%20FINAL%20for%20web.pdf

13. Grigoroglou C, Walshe K, Kontopantelis E, Ferguson J, Stringer G. Locum doctor use in England general practice: 2022; 1-10.

14. Beck C, Brown C. Could the UK Foundation Programme training allocation process result in regional variation in the knowledge and skills of Foundation doctors? A cross-sectional study. Heal Sci Reports. 2020;3(4):1-14.

15. Department of Health. Expansion of Undergraduate Medical Education: A consultation on how to maximise the benefits from the increases in medical student numbers. 2017.

16. Chief Medical Officer. Chief Medical Officer's annual report 2021: Health in coastal communities. London; 2021.

17. Parkhouse J. Doctor's careers: aims and experiences of medical graduates. London: Routledge; 1991.

18. Allen I. Doctors and their careers: a new generation. London: Policy Studies Institute; 1994.

19. Goldacre M, Davidson J, Maisonneuve J, Lambert T. Geographical movement of doctors from

education to training and eventual career post: UK cohort studies. J R Soc Med [Internet]. 2013;106(3):96–104.

20. Kumwenda B, Cleland JA, Prescott GJ, Walker KA, Johnston PW. Geographical mobility of UK trainee doctors, from family home to first job: A national cohort study. BMC Med Educ. 2018;18(1):1–10.

21. Scanlan G, Johnston P, Walker K, Skåtun D, Cleland J. Today's doctors: What do men and women value in a training post? Med Educ. 2020;54(5):408–18.

22. Cleland JA, Johnston P, Watson V, Krucien N, Skåtun D. What do UK medical students value most in their careers? A discrete choice experiment. Med Educ. 2017;51(8):839–51.

23. Cleland J, Johnston P, Watson V, Krucien N, Skåtun D. What do UK doctors in training value in a post? A discrete choice experiment. Med Educ. 2016;50(2):189–202.

24. Scanlan GM, Cleland J, Walker K, Johnston P. Does perceived organisational support influence career intentions? The qualitative stories shared by UK early career doctors. BMJ Open. 2018;8(6):1–12.

25. Scanlan GM, Cleland J, Johnston P, Walker K, Krucien N, Skåtun D. What factors are critical to attracting NHS foundation doctors into specialty or core training? A discrete choice experiment. BMJ Open. 2018;8(3):1–10.

26. Cox T, Howarth I. Organizational health, culture and helping. Work Stress An Int J Work Heal Organ. 1990;4(2):107–10.

27. Curran J, Baker P. Factors influencing recruitment and retention of foundation doctors in geographically unpopular locations. Futur Hosp J. 2016;3(1):17–20.

28. UK Foundation Programme Office. UKFP 2021 Foundation Priority Programmes (FPP) [Internet]. London; 2021. Available from: https://foundationprogramme.nhs.uk/programmes/2-year-foundation-programme/foundation-priority-programme/.

29. Buchan J, Gershlick B, Charlesworth A, Seccombe I. Falling short: the NHS workforce challenge [Internet]. The Health Foundation. 2019. 1–56 p. Available from: https://www.health.org.uk/publications/reports/falling-short-the-nhs-workforce-challenge.

30. Buchan J, Charlesworth A, Gershlick B, Seccombe I. Rising pressure: The NHS workforce challenge: Workforce profile and trends of the NHS in England [Internet]. 2017. Available from: https://www.health.org.uk/publications/rising-pressure-the-nhs-workforce-challenge.

31. Webster C. The National Health Service: a political history. 2e. Oxford: Oxford University Press; 2002.

32. Paton C. The politics of health policy reform in the UK: England's permanent revolution. Basingstoke: Palgrave Macmillan; 2016.

33. Haynes L. GPs demand greater focus on underdoctored areas as access inequalities grow [Internet]. GP Online. 2020 [cited 2021 Oct 26]. Available from: https://www.gponline.com/gps-demand-greater-focus-underdoctored-areas-access-inequalities-grow/article/1671764.

34. Fisher R. "Levelling up" general practice in England - What should government prioritise? [Internet]. The Health Foundation. 2021. Available from: https://www.health.org.uk/publications/long-reads/levelling-up-general-practice-in-england.

35. University Hospitals of Morecambe Bay NHS FT. Statement re pressures affecting UHMBT services [Internet]. 2022. Available from: https://www.uhmb.nhs.uk/news-and-events/latest-

news/statement-re-pressures-affecting-uhmbt-services

36. United Lincolnshire Hospitals NHS Trust. Update on pressures affecting ULHT services [Internet]. 2022. Available from: https://www.ulh.nhs.uk/news/update-on-pressures-affecting-ulht-services/

37. BBC News. Covid: hospital trusts declare critical incidents over staff shortages [Internet]. 2022. Available from: https://www.bbc.co.uk/news/uk-england-59866650

38. Marmot M. Build Back Fairer: The COVID-19 Marmot Review. The Pandemic, Socioeconomic and Health Inequalities in England. 2020.

39. Northern Health Science Alliance. A year of COVID-19 in the North: regional inequalities in health and economic outcomes [Internet]. 2021. Available from: https://www.thenhsa.co.uk/app/uploads/2021/09/A-Year-of-COVID-in-the-North-report-2021.pdf.

40. Dowd JB, Ding X, Akimova ET, Mills MC. Health and inequality: the implications of the COVID-19 pandemic. Oxford: Oxford University Leverhulme Centre for Demographic Science; 2020. Available from: https://www.thebritishacademy.ac.uk/documents/3219/COVID-decade-health-inequality-implications-LCDS-Oxford-Nov-2020.pdf.