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TACKLING THE INVERSE CARE LAW IN SCOTTISH GENERAL PRACTICE

Policies, interventions and the Scottish Deep End Project

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Errors or omissions remain the sole responsibility of the authors.

> *"The availability of good medical care tends to vary inversely with the need for it in the population served.*
>
> *This inverse care law operates more completely where medical care is most exposed to market forces, and less so where such exposure is reduced. The market distribution of medical care is a primitive and historically outdated social form, and any return to it would further exaggerate the maldistribution of medical resources."*
>
> **Dr Julian Tudor Hart. The Lancet, 1971.**

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EXECUTIVE SUMMARY

- The inverse care law was first defined by the GP Julian Tudor Hart in 1971 to describe how people who most need health care are least likely to receive it. In previous research the law has been shown to manifest in general practice in Scotland both in relation to the distribution of resources (fewer GPs and less funding in more socioeconomically deprived areas) and within consultations (higher GP stress, lower patient enablement and worse outcomes in practices in disadvantaged areas).
- In this report we identify and analyse policies and interventions to address the inverse care law in general practice in Scotland since 2000. We also present new findings from qualitative interviews with key stakeholders in Scottish primary care, and specifically consider evidence of the impact of the Scottish Deep End Project, a collaboration between academic and front-line GPs working in the most socioeconomically disadvantaged communities in Scotland. In addition, we report on recent data on estimated general practice workforce numbers by practice deprivation and practice funding.
- Our findings indicate that, since Scottish devolution in 1999, there have been numerous policy commitments to strengthening general practice in deprived areas, recognising the key role of GPs – as part of integrated multidisciplinary primary care teams – in reducing or mitigating health inequalities. Specific strategies have included changes to general practice funding, contracts, premises and wider team staffing, as well as a range of targeted interventions. However, there remains a major implementation gap between Scotland's policy ambitions to address health inequalities and sustainable delivery on the ground.
- Interventions to improve general practice in deprived areas were grouped into four broad categories, reflecting the main approach taken:
  - Interventions that enhance financial or social support (eg Community Link Workers)
  - Interventions that target specific health conditions (eg cardiovascular health checks)
  - Interventions that target specific populations (eg children and families)
  - Interventions that enhance generalist care (eg longer consultations)
- Of the 20 interventions analysed, few have received sustained investment, and only two interventions (both within the category to enhance financial or social support) have been rolled out nationally – Community Link Workers and Welfare Advice and Health Partnerships – with both facing uncertain futures beyond the short term.
- Qualitative interviews with key stakeholders revealed a widespread recognition and understanding of the inverse care law and what it means in deprived areas for patients, primary care staff and the wider health care system. Interviewees felt that the 2018 Scottish General Medical Services (GMS) contract does not sufficiently take into account the patient complexity and workload that GP practices face in deprived areas. There were hopes that Phase 2 of the contract would better address the inverse care law.
- The Scottish Deep End Project was reported to have played a key role in advocacy for patients living in deprived areas of Scotland, and in giving GPs working in very deprived areas a collective voice. It was felt to have also played an important role in education, research and service development.
- Our quantitative analysis showed that global practice payments per patient are relatively flat across deprivation deciles and do not match the steep gradient in need as indicated by avoidable mortality and disease burden.
- Despite higher levels of need in the most deprived areas, the core general practice-employed workforce is smaller than in the most affluent areas, with fewer estimated Whole Time Equivalent (WTE) staff per 10,000 patients across all workforce categories: GPs, practice-employed clinical staff and practice-employed administrative staff.
- The 2018 Scottish GMS contract has resulted in significant investment in, and growth of, the extended primary care multidisciplinary team (MDT) workforce. However, it is unclear whether this new workforce has been adequately distributed according to local population need across Scotland and the extent to which new MDT staff are physically based within general practice.

- Based on our findings, we make the following recommendations:
  - The Scottish Government should increase the proportion of NHS budget allocated to general practice and primary care.
  - The Scottish Government and policymakers should ensure that GP funding (via the Global Sum) and staffing are distributed in proportion to population need, following the principle of proportionate universalism.
  - The Scottish Government should work with NHS bodies and others to develop and implement a comprehensive and informed long-term workforce plan, which addresses the inverse care law in general practice.
  - Where interventions are working well – such as Community Link Workers and welfare advisers in general practices – the Scottish Government should ensure long-term funding.
  - The Scottish Government, NHS Scotland and Public Health Scotland should work together to ensure both rigorous health inequality impact assessments and subsequent monitoring and evaluation of the 2018 Scottish GMS contract and all new policies affecting general practice.
  - The Scottish Government, health boards and integration authorities should maximise the opportunities offered within the 2018 Scottish GMS contract and its next phase of development to address the inverse care law in general practice.
  - The Scottish Government, health boards and integration authorities should provide additional support to GP clusters to enable them to realise their specific remit to address health inequalities.
  - The Scottish Government should increase funding for robust and holistic primary care research to support evaluations of new primary care policy initiatives and inform future health care planning.

INTRODUCTION

"The availability of good medical care tends to vary inversely with the need for it in the population served. This inverse care law operates more completely where medical care is most exposed to market forces and less so where such exposure is reduced."

In 1971 the British general practitioner (GP) Dr Julian Tudor Hart first described the inverse care law [1]. In general practice the inverse care law manifests both in relation to the distribution of resources (relatively fewer GPs and less funding in more deprived areas) [2] and within consultations (higher GP stress, lower patient enablement and worse outcomes in practices in deprived areas) [3,4]. Since devolution in 1999, successive Scottish Governments have sought to address health inequalities. Despite this policy ambition, the gap in healthy life expectancy between the richest and poorest in Scotland is widening [5]. High-quality general practice has an important role in improving population health and reducing or mitigating health inequalities, but it can only fulfil this role if adequately resourced, with a sufficient workforce distributed according to need (proportionate universalism).

The inverse care law in general practice was well-documented in Scotland almost two decades ago [3]. In 2022 the Health Foundation published an analysis of policies since 1990 designed to improve general practice in deprived areas in England [6]. It found a range of approaches had been taken to make the provision of primary care more equitable, including changes to general practice funding, contracts, buildings and staffing. Our report, commissioned by the Health Foundation, follows a similar process of analysis for Scotland. In this report we assess efforts to address the inverse care law in general practice in Scotland over the past 20 years, and then set out recommendations for making the availability of high-quality general practice more equitable in the future.

In the first Findings chapter we analyse policies and interventions to tackle health inequalities via general practice services in Scotland since 2000 (the year after devolution). In the second Findings chapter we present findings from qualitative interviews with key stakeholders in Scottish primary care and consider evidence of the impact of the Scottish Deep End Project, a collaboration between academic and front-line GPs working in the 100 practices serving the most socioeconomically disadvantaged communities in Scotland, of which roughly 80% are in Glasgow [7]. In the third Findings chapter we report recent data on estimated general practice workforce numbers by practice deprivation and practice funding. We conclude by considering the implications of our analysis and set out recommendations for policy and practice.

Although there are many parallels in the learning from this research in England and Scotland, there are three important differences in our context and approach that preclude a direct comparison. Firstly, there are differences in how general practice is funded, commissioned and delivered (see Box 1). While the NHS in England has largely retained the purchaser-provider split, focusing health (and social) care commissioning within integrated care systems (ICSs) – replacing the clinical commissioning groups (CCGs) and primary care trusts (PCTs) before them – the NHS in Scotland has limited competition in favour of system-wide integration of commissioning and provision of services within health boards. Primary care networks (PCNs) have also been in operation in England since 2019, bringing together groups of general practices to collectively contract to recruit new staff and deliver additional appointments and new services in collaboration with other local bodies. The Health Foundation report *Doing more for less?*, published in December 2023, explored the experience of PCNs in deprived areas, demonstrating that once need is accounted for, networks in more deprived areas had fewer staff and received less funding [8]. There is no directly comparable structure in Scotland. Health and Social Care Partnerships (HSCPs) have the nearest equivalent function, whereas GP clusters have the nearest equivalent membership, although they are only comprised of GPs. HSCPs also have a statutory duty to ensure a proactive approach to addressing health inequalities under the Public Bodies (Joint Working) (Scotland) Act 2014.

Secondly, in this report we take a broader view of the inverse care law, encompassing not only the *supply* of GPs and funding in deprived areas – the focus of the English report – but also including interventions that have sought to improve the *quality* of care in these practices. We also take a broader view of general practice, including not just the practice-employed workforce, but interventions that have supported other members of the extended primary care multidisciplinary team (MDT) if they are based in general practice or work closely with general practice teams (eg health visitors, Community Link Workers and financial advisers).

Thirdly, we wanted to specifically assess the impact of the Scottish Deep End Project. This important ground-up response to the inverse care law began in 2009, roughly at the midpoint of the period of interest. The group quickly established a sense of identity and common purpose, driven by a steering group of Deep End GPs, with academic input. Many of the other interventions described in this report either began as pilot projects in Deep End practices (eg Community Link Workers and Welfare Advice and Health Partnerships) or were Deep End initiatives (eg Govan SHIP and the Deep End Pioneer Scheme). There is no quantitative data available on the impact of the Deep End project. We decided, therefore, to include qualitative interviews with key stakeholders to help assess this impact.

APPROACH AND METHODS

We used a mix of methods to understand and evaluate policies and interventions that addressed the inverse care law in general practice in Scotland since the year 2000. We broadly followed the approach used in the Health Foundation report on tackling the inverse care law in England [6], while acknowledging the differences highlighted in the introduction above.

Methods

Full details of the methods are in Appendix 1 and summarised below:

1. **Systematic scoping review of academic and grey literature**

- We searched Embase, Web of Science, MEDLINE, CINAHL, Cochrane and BASE from 2000 to March 2022 to retrieve papers describing policies or interventions that aimed to tackle health inequalities via general practice in Scotland (because we knew that few would explicitly cite the inverse care law). In addition, we performed a systematic grey literature search of government, NHS and third sector websites. (See Appendix 2 for the full search strategy.) We were interested in policies or interventions at different levels (national, regional and local) focusing on:

  a) increasing the *supply* of health care in deprived areas (eg staffing, financial resources)

  b) improving the *quality* of health care in deprived areas (eg training, peer support)

  c) improving the *organisation* of health care in deprived areas (eg MDT working, outreach).

Papers describing interventions were assessed using an established evaluation framework from the Scottish School of Primary Care [9] (See Appendix 3 for an illustrative example.)

2. **Qualitative interviews with key stakeholders**

- We conducted semi-structured interviews with key stakeholders between May and December 2022. The aim was to explore their views on the inverse care law in Scottish general practice, along with policies or interventions that have sought to address it, and the impact of the Scottish Deep End Project. The 17 interviewees were from five professional groups: public health specialists (n=4), Deep End GPs (n=4), GPs in national leadership roles (n=3), primary care academics (n=3) and third sector organisation leads (n=3). (See Appendix 4 for interviewee characteristics.)

3. **New analysis of publicly available data**

- We sought data on need, supply and quality of general practice in Scotland, with a focus on general practice funding streams and workforce capacity.

Limitations

There are several limitations to our analysis. First and foremost, it is limited by the quantity and quality of available data. For instance, data on Whole Time Equivalent (WTE) staff in general practice has not been routinely collected since 2004. The workforce data we have used is based on a voluntary survey, representing half of all Scottish practices [10]. Similarly, we were unable to replicate the needs-adjusted calculations undertaken for the equivalent English report because it is not possible to identify the individual practices that take part in the voluntary workforce survey. Other data – such as data on the Scottish Primary Care Improvement Fund (PCIF) – is not currently broken down by deprivation, thereby preventing analysis on this basis.

Finally, as with the equivalent English report, we focused on general practice (albeit a broader view of general practice as described above, incorporating other members of the general practice-based team) but not primary care as a whole. Recent developments in other primary care services, such as dentistry, podiatry and optometry, are beyond the scope of this report [11]. We are also mindful that we have not specifically captured the key role of community nursing in socioeconomically disadvantaged areas due to a lack of available data [12].

FINDINGS 1: POLICY AND INTERVENTIONS TO IMPROVE GENERAL PRACTICE IN DEPRIVED AREAS IN SCOTLAND SINCE 2000

This section presents findings from a systematic scoping review of policies and interventions that aimed to reduce health inequalities through general practice in Scotland. A total of 77 papers – 35 from peer-reviewed academic literature and 42 from grey literature – were included. Of these, 14 related to policy papers or policy analyses, while 63 related to a total of 20 interventions. Summaries of included papers are in a supplementary file, available on request by email: david.blane@glasgow.ac.uk.

We first provide an overview of relevant Scottish Government policy related to addressing health inequalities in Scottish general practice, with a summary of the 14 included policy documents. Then we present our analysis of the interventions.

Policy context

Addressing health inequalities has been a stated priority area for the Scottish Government since devolution in 1999. The white paper *Towards a Healthier Scotland* [13], published in the same year, established the public health agenda in Scotland, with an overarching focus on tackling health inequalities. It launched four major initiatives, including Starting Well, an intensive home-visit programme aimed at improving the health of preschool children in disadvantaged areas (see next section).

Since then, numerous government policies and strategies have made commitments to tackling health inequalities, emphasising the key role of general practice (see Table 1), although only two explicitly mention the inverse care law [14,15].

The policies included in Table 1 are not equal in size or impact, and some have been of more importance than others. For instance, the 2005 *Delivering for Health* report set out NHS Scotland's response to the challenges posed by the combination of an ageing population and persistent health inequalities [16]. It launched several interventions focused specifically on tackling health inequalities, including the development of an anticipatory care model for primary care (Keep Well) to target geographic communities of greatest need [16,17].

In 2011 the landmark Christie Commission on the future delivery of public services set out a radical vision for public sector reform underpinned by four key principles: empowerment, integration, prevention and efficiency [18]. This has led to significant new legislation such as the Community Empowerment (Scotland) Act 2015 and, for the health system in Scotland, the Public Bodies (Joint Working) (Scotland) Act 2014, which mandated the statutory integration of health and social care, creating new integration authorities on a legal basis, changing the landscape of Scottish primary care and placing a statutory obligation on the new integration bodies to take a proactive approach to addressing health inequalities.

Table 1: Policies relevant to addressing health inequalities in Scottish general practice

Year	Title and summary
2003	***Improving Health In Scotland: The Challenge*** **[19]** Framework for action on *Towards a Healthier Scotland*. Described the importance of cross-sector senior level leadership. Outlined 44 actions, including the creation of NHS Health Scotland.
2005	***Delivering for Health*** **[16]** Outlined actions for NHS Scotland to achieve health improvement, including plans for a programme of anticipatory care (Keep Well). Emphasised the integration of GP with other community services. Stated, "*We believe the most significant thing we can do to tackle health inequalities is to target and enhance primary care services in deprived areas.*"
2007	***Better Health Better Care: action plan*** **[17]** Extended anticipatory care approaches. Committed to reform the GMS contract to serve deprived populations, including improved access and expanded professional roles. A Ministerial Task Force on Health Inequalities was established.
2008	***Equally Well*** **[20]** Paired with Achieving Our Potential and Early Years Framework as the Scottish Government's strategy for tackling poverty and inequality, requiring a cross-sector approach. Recommended reformed funding of primary care services to meet the needs of at-risk groups and promoted fair employment practices by GP practices. Further reviews published in 2010 and 2014.
2011	***The Christie Commission and Scottish Government response*** **[18]** Review of public services in the context of tightening budgets. Called for public service reform, not specific to general practice but highly influential for future health and social care policy.
2012	***Health Inequalities in Scotland*** **[21]** Audit Scotland report. Specifically mentioned the Scottish Deep End Project and recommended redistribution of services by deprivation. Recommended health boards should monitor the use of primary care by different groups, particularly those from deprived areas.
2013	***Health Inequalities Policy Review for Scottish Ministerial Task Force on Health Inequalities*** **[22]** A review of policies and their impact on health inequalities. Emphasised wider structural changes needed, and preventative strategies. Promoted increasing provision in areas of deprivation.
2015	***Report on Health Inequalities*** **[14]** Report by the Health and Sport Committee for the Scottish Government. Gave insight and understanding into the inverse care law and the burden of care in deprived areas.
2016	***A National Clinical Strategy for Scotland*** **[23]** Framework for the development of health services across Scotland for the next 15 years, including stronger primary care, MDT working and more integration. Emphasised the need for Realistic Medicine [24].
2017	***Improving Together: A National Framework for Quality and GP Clusters in Scotland*** **[25]** Framework for values-driven quality improvement via GP clusters. Outlines the intrinsic and extrinsic roles of clusters, including "*improving wellbeing, health and reducing health inequalities*".
2017–2018	***National Health and Social Care Workforce Plan: Parts 1 & 3*** **[26,27]** Outlined a strategy for recruiting to (and from) areas of deprivation, including plans to employ 250 Community Link Workers in deprived areas, along with 800 more GPs nationally over the subsequent 10 years. Requirement for primary care improvement plans to show how inequalities will be addressed.
2019	***National Monitoring and Evaluation Strategy for Primary Care in Scotland*** **[28]** Detailed the Primary Care Outcomes Framework as a conception and evaluation tool intended to be used to understand changes in the subsequent 10 years.
2020	***Everyone matters: 2020 health workforce vision*** **[29]** Outlined a strategy for workforce planning, training and role development.
2022	***Report of the Primary Care Health Inequalities Short-Life Working Group*** **[15]** Made 23 recommendations for actions in primary care to reduce health inequalities, including support for Community Link Workers and welfare advisers in practices, an enhanced service to target additional resources to general practices in areas of the highest deprivation and need, and health-equity focused training for health and social care staff.
2022	***Tackling health inequalities in Scotland*** **[30]** Five-year report from the Health, Social Care and Sport Committee for the Scottish Government. Promotes proportionate universalism.

In 2018 there were several policies with significant implications for general practice in Scotland. First and foremost, a Scotland-only GP contract was introduced for the first time, removing the Quality and Outcomes Framework (QOF) and promoting MDT working across clusters of GP practices (see Box 1 and Findings 3 – Workforce). Then the *National Health and Social Care Workforce Plan: Part 3 – Improving workforce planning for primary care in Scotland* outlined plans to bolster the primary care workforce, including a commitment to 800 more GPs (headcount rather than WTE) in the subsequent 10 years [26]. This followed an earlier pledge to recruit 250 Community Link Workers to practices in deprived areas. In the same year the Fairer Scotland Duty also came into force, placing a legal responsibility on public bodies to actively consider ("pay due regard" to) how they can reduce inequalities of outcome caused by socioeconomic disadvantage when making strategic decisions, and to show how they are achieving this [31]. As far as we are aware, this duty has yet to be used to assess efforts to address the inverse care law.

One of the most significant Scottish Government reports in relation to the inverse care law in general practice was the 2022 report of the Primary Care Health Inequalities Short-Life Working Group [15]. The report, which included an accompanying report of lived-experience perspectives from the Chance 2 Change group, outlined 23 recommendations across nine themes to maximise primary care's significant potential to tackle health inequalities. Many of the recommendations related to general practice, including a Scottish programme of multidisciplinary postgraduate health equity-focused training (similar to the Fairhealth programme in England) [32] and an inclusion health enhanced service. Later that year a Health, Social Care and Sport Committee report on tackling health inequalities in Scotland supported a call for "proportionate universalism" [30] – ie resourcing and delivering universal services at a scale and intensity proportionate to the degree of need [33,34].

Policy documents from scoping review

Of the 14 policy documents included in our systematic scoping review, four are featured in Table 1 [15,25,26,28] of which two have been discussed above. The remaining 10 documents included three policy analyses [35–37], three health inequalities strategies from different health boards (Highland, Lanarkshire and Lothian) [38–40], two frameworks (one on the role of health and social care partnerships in reducing health inequalities and one to support Community Health (and Care) Partnerships) [41,42], the 2018 GMS contract itself [11], and a report by the Scottish Deep End Project entitled *What can NHS Scotland do to prevent and reduce health inequalities?* [43].

Of the three policy analysis papers, one looked at the distribution of workload and payment in the clinical domains of the QOF to assess the extent to which the stated aim of tackling health inequalities was achieved [36]. It found that QOF payments were poorly related to workload and that practices serving deprived populations were systematically penalised under the QOF payment system. Another paper explored the impact of the 2004 GMS contract on socioeconomic inequalities associated with uptake of the influenza immunisation via Scottish GP practices and found that inequalities persisted in the first three years of the QOF [37]. The third policy analysis paper, which explored the contribution of primary care to reducing inequalities in mental health, found a disjointed policy landscape with no clear understanding of inequalities in mental health [35].

The health inequalities strategies from the health boards did not offer any additional policy insights, but outlined ongoing and planned activities related to national policies such as Keep Well or Community Link Workers. The framework of actions that HSCPs should consider when developing their strategic plans includes a commitment to proportionate universalism [42]. However, we are not aware of any practical examples of where this approach has been applied.

Interventions

As described in the methods section, the included interventions were assessed using the Scottish School of Primary Care's evaluation framework [9]. This involved extracting key information on intervention components, anticipated and actual impacts, learning from the programme, and whether the intervention achieved spread and sustainability. (See Appendix 3 for an example.)

We grouped the 20 included interventions into four categories, reflecting the main approach taken by the intervention:

- Interventions that **enhance financial or social support** (eg Community Link Workers) (n=4)
- Interventions that **target specific health conditions** (eg cardiovascular health checks) (n=3)
- More holistic interventions that **target specific populations** (eg children and families) (n=4)
- Interventions that **enhance generalist care** (eg longer consultations) (n=9)

Of the 20 interventions analysed, few have received sustained investment and only two interventions (both of which fall under category 1 above) have been rolled out nationally – Community Link Workers and welfare advisers – with both facing uncertain futures beyond the short term. The Scottish Deep End Project and the Attached Alcohol Nurse project are also ongoing.

Seven interventions (n=45 papers) accounted for over 70% of the 63 included intervention papers – the Community Link Worker programme (n=16), Keep Well (n=7), Welfare Advice and Health Partnerships (n=6), Starting Well (n=5), the CARE Plus study (n=4), the Scottish Deep End Project (n=4) and the Govan SHIP project (n=3).

Figure 1 illustrates the approximate timeline of the seven most cited interventions, and Table 2 provides a brief description of all 20 interventions. A supplementary file (available on request by email: david.blane@glasgow.ac.uk) contains detailed summaries of all papers.

Figure 1: Timeline of the seven most cited interventions to address inverse care law in general practice

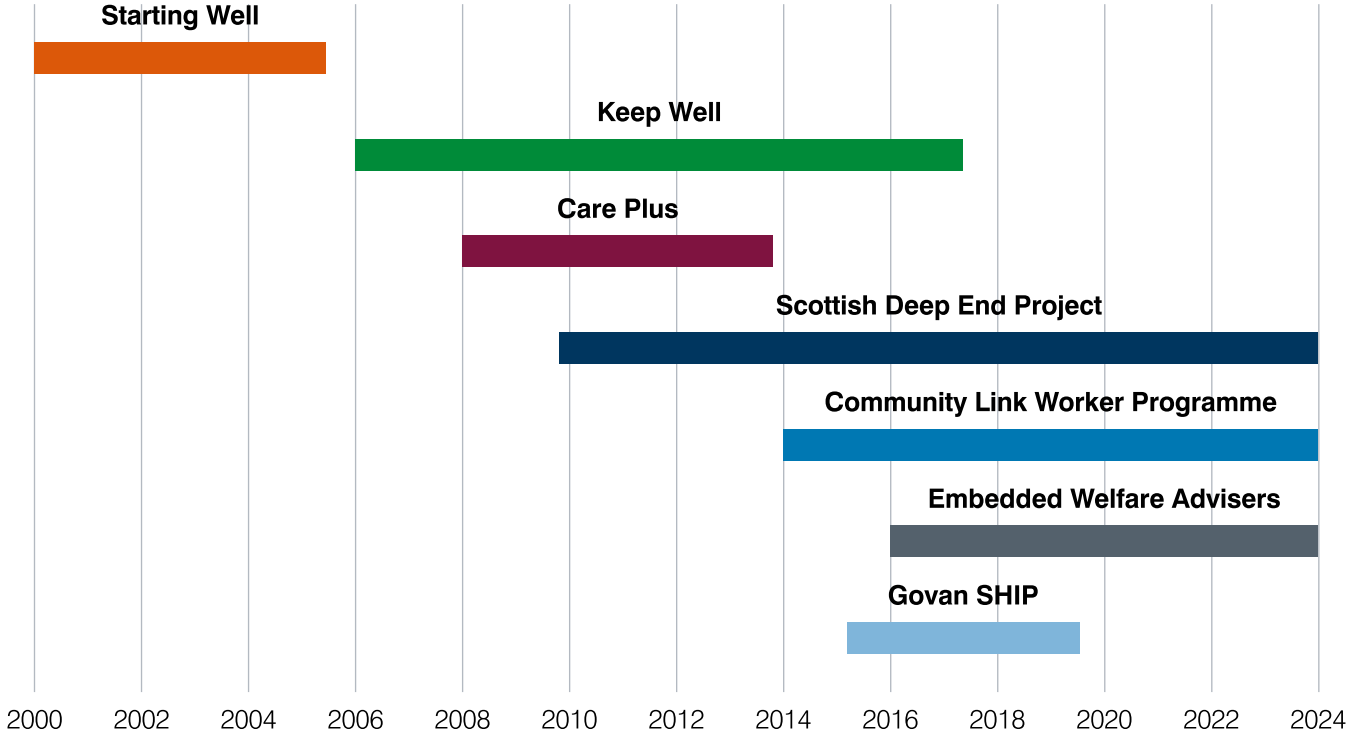


Table 2: Brief description of all included interventions

Interventions that *enhance financial or social support*	
*Welfare Advice and Health Partnerships	Welfare advisers attached to GP practices to support patients with financial issues such as debt, benefits and rent arrears
*Community Link Workers	Practice-attached generalist community practitioners offering non-clinical support, signposting and health promotion
Green Health Partnerships	Social prescribing initiatives to promote and support the use of green spaces for health improvement
Social prescribing initiatives	Using non-clinical prescriptions for health promotion activities such as exercise classes or social cafes
Interventions that *target specific health conditions*	
*Keep Well	A national programme to improve cardiovascular anticipatory care in underserved populations
Attached alcohol nurses	Known as PCANOS (primary care alcohol nurse outreach service) – embedding specialist nurses into GP practices to perform targeted assessments and outreach for individuals with problem alcohol use
Blood borne virus screening	Offering screening for blood borne viruses to higher-risk groups of patients in general practice
Holistic interventions that *target specific populations*	
*Starting Well	Combined an intensive health visitor schedule for families living in deprived areas with community development initiatives
Bridge Project	Developed links between older patients in deprived areas and community-based resources to promote health and wellbeing
Living Better	Qualitative study of mental health issues in patients with long-term conditions, combined with training and resource development
Homelessness outreach services	Outreach general practice in homelessness centres to improve accessibility
Interventions that *enhance generalist care*	
*CARE Plus	A complex intervention to improve consultations for patients with multimorbidity in areas of deprivation
*Govan SHIP	Integrated general practice with social work through MDT meetings, additional GP capacity and co-location of social work
*Scottish Deep End Project	A collaboration between academic and front-line GPs working in practices serving the 100 most deprived areas in Scotland
Deep End Pioneer Scheme	A fellowship scheme for early career GP fellows in Deep End practices, also providing protected time for experienced GPs to pursue service development and collaborative working
New models of primary care	A range of primary care test-of-change projects, some of which aimed to address health inequalities
Local health care cooperatives	Voluntary groups of GP practices within geographical areas to manage budgets, undertake commissioning and pursue quality improvement
Training for health care staff	A range of health inequalities-specific training available to health care staff, eg Health Inequality Fellowships
Participatory action research	Involving members of a disadvantaged community in shaping quality improvement of local primary care services
Infrastructure	Examples of infrastructure improvements (eg premises) that were made in areas of socioeconomic deprivation

*The seven most cited interventions accounting for over 70% of included intervention papers

Drawing on our assessment of the papers, we have distilled key learning for each of the four intervention categories, with a more in-depth discussion about one or two exemplar interventions in each category.

Key learning from interventions that enhance financial or social support

Four interventions were included in this category: Community Link Workers [44–59], Welfare Advice and Health Partnerships [60–65], Green Health Partnerships [66] and social prescribing schemes [67].

Key learning: Success is more likely if roles are **practice-embedded** and there is good practice **team engagement** and support, **continuity** with patients, **clarity of roles,** clarity/**sustainability of funding** arrangements, adequate **practical support** (room space, IT, admin support), **sustainability of third sector partner organisations** being 'linked to', and **learning from monitoring and evaluation.**

Community Link Workers (n=16) [44–59]

Community Link Workers (CLWs) are practice-attached generalist community practitioners offering non-clinical support, signposting and health promotion.

Impact – An evaluation of the pilot project found no differences between the intervention and control practices for any outcome [47]. In subgroup analyses, however, patients who saw the CLW on three or more occasions (45% of those referred) had significant improvements in quality of life, mental health and exercise levels.

Learning – Key lessons were:

- Practices varied in the extent to which they engaged with the CLW initiative. In the pilot study only three practices fully implemented the CLW role [47]. Fully integrated practices had a better shared understanding of the programme among staff, higher staff engagement with the CLW, and implemented all aspects of the CLW role at patient, practice and community levels.
- In qualitative evaluations, the CLW role was seen as enhancing capacity for addressing social issues [48,49,59]. This was achieved through building capacity among the wider practice teams for appropriate signposting to take place, and through the availability of the CLW to undertake one-to-one work with individuals who require more support. Benefits included improved referrals and bridging between community organisations and GP practices.
- Ongoing issues related to clarity of roles, the enablers of multidisciplinary team working, and practical challenges associated with available space, IT, and monitoring and evaluation.

Spread and sustainability – The Community Link Worker programme began as a pilot project in seven Deep End GP practices in Glasgow in 2014. Since then it has been rolled out across Scotland, with more than 300 CLWs now working in general practice, mostly in areas of deprivation.

Welfare Advice and Health Partnerships (n=6) [60–65]

Welfare advisers are attached to GP practices in deprived areas to support patients with financial issues such as debt, benefits and rent arrears.

Impact – Following the successful integration of welfare advice services in two Deep End GP practices in north-east Glasgow [63], a larger evaluation of welfare advice integration across nine GP practices reported a return on investment of £25 for every £1 spent [65]. Over a 12-month period, participating GPs referred 654 people to practice-attached advice services (compared to just 71 referrals from 35 GP practices that were not part of this integrated approach), securing around £1.5 million in financial gains, with over half for disability-related benefits. Support to manage household debts totalled £470,000. Homelessness and housing issues, followed by mental health, were the most common reasons for people being referred to other support services.

Learning – Key lessons were:

- People seeking advice were more likely to be single women, older, unfit for work, and living in social housing. When asked, two-thirds said they had not had any contact with advice services in the past year. The majority were living below a standard poverty measure (before housing costs) for a single person, with two-thirds on less than £10,000 a year and around one in five on less than £6,000 a year [65].
- Welfare advisers welcomed new ways of working, such as having access to medical evidence and drafting letters signed off by the GP to be used at benefits reviews and appeals. The workers viewed practices as a trusted hub that could help reduce stigma and encourage people to be more open about their money worries [65].
- Project benefits included some practice staff reporting an easing of workload and reduction in welfare-related appointments, new working relationships that allowed staff to directly refer to welfare advisers, and a subsequent increase in GPs referring patients to advice services [65].

Spread and sustainability – The Welfare Advice and Health Partnerships began as a pilot project in four Deep End practices in 2016. A further 2-year pilot from 2022 to 2024 allowed wider rollout across Scotland in the areas of highest deprivation. Beyond September 2024, central funding will no longer be available and the future of this programme is uncertain.

Key learning from interventions that target specific health conditions

Three interventions were included in this category: Keep Well [68–74], blood borne virus screening [75–77] and Attached Alcohol Nurse specialists [78,79]. The biggest and most frequently cited intervention is described in more detail, with key learning from all three interventions summarised below.

Key learning: Success is more likely if roles are **practice-embedded,** if there are **good interprofessional working relationships** and clarity around **engagement, education and evaluation** strategies, and if service delivery has the ability to be **proactive, responsive, outreach-based, flexible, responsive** and **'sticky'** (ie making repeated efforts to contact patients once referred).

Keep Well (n=7) [68–74]

Keep Well was a national programme of anticipatory care with the aim of contributing to a reduction in health inequalities in Scotland by providing health checks targeting people aged 45–64 who were at particular risk of preventable serious ill health, predominantly heart disease, and offering appropriate interventions, services and follow-up. Seven documents with a mix of quantitative and qualitative methods were identified.

Impact – There was no evidence of impact as a cardiovascular intervention (eg no reductions in CVD mortality or hospitalisations). The key evaluation finding was extensive variation at three levels: engaging the population subgroups at highest risk, changing the health literacy, risk factors and behaviour of those who engage, and sustaining adherence to any changes after the Keep Well consultation.

Learning – Key lessons were:

- Implementation of the Keep Well programme was highly variable across Scotland in its form, focus, delivery settings and expected outcomes. While there were advantages in local flexibility, the disadvantages included difficulties in evaluating impact, along with uncertainty about the evidence supporting specific local approaches.
- Community Oriented Primary Care (COPC) clusters may offer opportunities to improve strategic linkage at all levels and provide more coherent programme support to local health improvement systems.
- Customised models of anticipatory care are likely to be required for defined subpopulations, building on the success of the South Asian Anticipatory Care (SAAC) and Carers' pilots.
- The main NHS evaluation concluded that, due to the high degree of uncertainty of evidence supporting health checks, and where the intervention does not lend itself to short-term process measures as valid proxies for desired outcomes, a substantial programme such as Keep Well should be implemented in the context of a controlled trial with comparison groups, considering options such as cluster randomisation or stepped-wedge designs.

Spread and sustainability – Keep Well was launched in 2006 across five Scottish regions with high levels of deprivation. There were several waves of Keep Well, each bringing on new areas and/or general practices and having slightly different requirements: Wave 1 (2006), Wave 2 (2007), Well North (2008), Wave 3 (2009) and Wave 4 (2009). As the programme evolved it incorporated other population groups and initiatives. A process of 'mainstreaming' began in April 2012 with the aim of making targeted health checks part of normal, permanent practice by 2014. In 2013 the Chief Medical Officer announced that central funding for Keep Well would cease in 2017 and we are not aware of anywhere it has continued with local funding.

Key learning from holistic interventions that target specific populations

Four interventions were included in this category: Starting Well [80–84], the Bridge Project [85], Living Better [86] and homelessness outreach services [87]. The biggest and most frequently cited intervention is described in more detail, with key learning from all four interventions summarised below.

Key learning: Success is more likely if programmes **enable local understanding,** local ownership and/or employment, clarity and **standardisation of roles,** sustainability of third sector partners, **co-location of services** to improve access, **relational continuity,** and identification and **addressing** of **unmet training needs** for staff, and if there is a strategy for dealing with previously unidentified unmet need.

Starting Well (n=5) [80–84]

Starting Well was a national child health demonstration project for families living in disadvantaged areas, combining an intensive health visitor schedule with community development initiatives. Five papers evaluated this intervention with qualitative and quantitative methods.

Impact – Parents reported increased confidence in infant care, reduced anxiety regarding infant needs, increases in knowledge and a sense of personal competence in parenting practices, and reduced isolation. The programme employed support workers from within socioeconomically deprived communities, leading to upskilling and direct investment through employment. It also allowed for advocacy for people experiencing housing, financial or family problems.

Learning – Key lessons were:

- An empathetic health visitor/parent relationship, rather than a didactic relationship, may make the difference between a positive and neutral/negative response to the intervention.
- Health visitors reported an escalating workload as the programme uncovered a large burden of need, and they found the intensive visiting schedule unsustainable.
- Health visitors found it challenging to carry out the community development aspect of the role on top of a large clinical workload. It was recommended that a dedicated role was created.
- The support workers were effective at bridging the gap between health visitors and families, but the role was poorly defined and there was large variation in their activities.

Spread and sustainability – Starting Well ran in Glasgow between 2001 and 2005, with no evidence of spread. The programme was found to be vulnerable to the level of enthusiasm and engagement by primary care teams, which affected implementation. The escalating workload for the health visitors within this well-funded pilot suggests the programme would not be sustainable in its current form without significant investment.

Key learning from interventions that enhance generalist care

Nine interventions were included in this category: CARE Plus [88–91], Govan SHIP [92–94], the Scottish Deep End Project [7,95], the Deep End Pioneer Scheme [96,97], new models of primary care [98], local health care cooperatives [99,100], training for health care staff [101,102], participatory action research [103] and infrastructure developments [104,105]. Two of the biggest interventions are described in more detail, and key learning from all nine interventions is summarised below.

Key learning: Success is more likely if there is **adequate planning and consultation with staff and patients** prior to implementation; if mechanisms are established to **share learning;** if unmet health equity **training needs are identified and addressed;** if **specific support** is offered **for interprofessional and interdisciplinary working** (eg IT systems, time, project management); and if there is support for **cultural change, leadership support,** role clarity, clear governance, consideration of community/patient/carer **co-design,** targeted **longer consultations, relational continuity** of care, adoption of **anticipatory/proactive/preventative approaches, protected time** for learning and development, and involvement in advocacy.

Govan SHIP (n=3) [92–94]

The Govan Social and Health Integration Partnership (SHIP) project involved additional GP capacity and closer working between general practice and social work (and others) through extended MDT meetings. Three papers described and evaluated this intervention.

Impact – The additional GP capacity allowed for several tests of change to be implemented, including a home-visit project to reduce unscheduled care and extended consultations for selected patients with multiple long-term conditions. GPs also used this time for case reviews, writing reports and attending meetings such as child protection reviews or case conferences. The project demonstrated effective MDT working and the employment of embedded professionals such as social care workers, pharmacists and physiotherapists. MDT working improved as time passed and teething problems were resolved. There were several case reports of direct benefit to individual patients.

Learning – Key lessons were:

- Challenges related to social work involvement in MDT meetings included concerns about the time burden of meetings, a lack of understanding of the social work role, a lack of knowledge about eligibility criteria for services, and conflicts between health care and social work around risk and vulnerability. Consistent, sustained MDT work resolved these issues, and further guidance is provided in the evaluations.
- The extra time available to GPs was found to reduce work-related stress and therefore could help reduce burnout. The project resulted in full recruitment into vacant GP partnership posts.
- Leadership should be provided by a project manager who is independent of the professionals involved – a boundary spanner who is not seen to be benefiting any particular professional group.
- There should have been a stronger focus on planning prior to implementation to maximise staff engagement, and the model would benefit from a wider constituency of professionals.

Spread and sustainability – The project ran from April 2015 to the end of 2018. Some aspects, such as redirection from A&E or liaison with medicine for the elderly, did not have the required critical mass or wider system support to be implemented. One practice opted out of the project at the end of the first year, and was replaced by another practice outside the health centre, but the reasons for this are not given.

CARE Plus (n=4) [88–91]

CARE Plus was a complex intervention to improve consultations for patients with multimorbidity in areas of socioeconomic deprivation. Four papers were identified with a range of methodologies evaluating the CARE Plus model, including a cluster randomised control trial.

Impact – The main evaluation found that the intervention improved quality of life (when measured by area under the curve) and significantly reduced negative wellbeing scores. There was no statistically significant impact on other markers of wellbeing, although the trend for all was in favour of the CARE Plus group. CARE Plus had a cost-effectiveness ratio of £12,224 per Quality Adjusted Life Year (QALY), which is highly cost-effective based on NICE guidance.

Learning – Key lessons were:

- The CARE Plus model is implementable, supported by staff and patients, potentially cost effective and improves patient wellbeing.
- GPs reported that extended consultations enabled anticipatory care through opportunistic health screening, promotion and treatment.

Spread and sustainability – Because the intervention requires practitioner training, staff shortages and high workload could reduce the ability of practices to engage with it over a longer period. However, all eight practices were able to complete the RCT and they achieved a high level of retention among patients.

Summary

It has been more than 20 years since devolution and more than a decade since the Christie Commission was published. There remains a major implementation gap between Scotland's apparent policy ambitions to address health inequalities and sustainable delivery on the ground [106].

Of the 20 interventions that could be said to address the inverse care law in Scottish general practice, only four are ongoing (three at national level and one at local level), all with uncertainty over their long-term sustainability. It is unclear why so many of the others have not been sustained, but most were either relatively small scale or regional pilot projects (eg Deep End Pioneer Scheme, Govan SHIP) or larger national initiatives (eg Keep Well) that were not able to demonstrate sufficient benefit to warrant ongoing investment. Many evaluations are limited by short timescales, making it difficult to show impact, and there is often an expectation from Government that health boards will continue funding if evaluation demonstrates a positive impact. Due to competing financial priorities, however, this is not always possible.

FINDINGS 2: INTERVIEWS WITH KEY STAKEHOLDERS IN SCOTTISH GENERAL PRACTICE

In this section we present findings from our interviews, organised by the themes we identified. We conducted 17 semi-structured interviews with key stakeholders between May and December 2022. The aim was to explore their views on the inverse care law in Scottish general practice, along with policies or interventions that have sought to address it, and the impact of the Scottish Deep End Project. The interviewees were from five professional groups: public health specialists (n=4), Deep End GPs (n=4), GPs in national leadership roles (n=3), primary care academics (n=3) and third sector organisation leads (n=3). A researcher experienced in qualitative methods used reflexive thematic analysis to analyse the interview transcripts. See Appendix 1 for details of the methods and Appendix 4 for the interviewee characteristics.

1. How the inverse care law manifests in Scottish general practice

All interviewees discussed how the inverse care law manifests as insufficient resources to meet complex needs in the most socioeconomically deprived areas. For Deep End GPs, there is not enough time in the day, and not enough days in the working week, to adequately meet patients' needs.

> *"General practice is particularly challenged in Deep End areas and the inverse care law is just an expression of the challenges…for me as a GP over the years what it really came down to was a lack of time more than anything. Time isn't factored into the economic planning of primary care budgets and general practice."*
>
> *(P13, Deep End GP)*

There was also recognition that the strains placed on general practice have knock-on effects for other parts of the health and social care system.

> *"If you under-resource the health care system in areas where the prevalence of problems and complexity is high, then complications and crises are less likely to be prevented, and they're more likely to end up at the door of A&E. And that's happening just now."*
>
> *(P1, Primary Care Academic)*

Interviewees noted that the inverse care law could manifest as difficulties in accessing and navigating complex health and social care systems, particularly for people with mental health conditions, low health literacy or language difficulties. Furthermore, interviewees were cognisant that access to high-quality general practice is only one factor influencing an individual's health and wellbeing. For many patients in deprived areas, there are other, more pressing demands related to financial stress and the cost-of-living crisis. This can lead to difficult choices – attending health appointments may be less of a priority than eating or heating.

2. Initiatives to tackle the inverse care law

Interviewees were asked to reflect on policies or interventions – at national, regional or local levels – that had addressed the inverse care law in general practice. Some interviewees, particularly Deep End GPs, felt that little had changed on the ground.

> *"I've worked here for a long time and…we've argued the case for several decades that there is an inverse care law and that we need specific measures to address it. And it's very hard to think of specific measures that have been put in place."*
>
> *(P2, Deep End GP)*

Most interviewees, however, were able to cite national-level interventions that had been targeted at deprived areas. The three most frequently discussed were Keep Well, Community Link Workers and Welfare Advice and Health Partnerships.

Keep Well (the national anticipatory care programme that ran from 2006 to 2017, as described in the scoping review) was the most frequently mentioned intervention. Interviewees recognised that Keep Well was well intentioned but flawed from the outset.

> *"When they first started…they didn't really dictate what kind of activities practices had to do. So they went for that…'let a thousand flowers bloom' approach, which is then really difficult to evaluate and know if it's meeting any of the targets."*
>
> *(P11, Primary Care Academic)*

Other interviewees expressed concerns about the vertical, single-disease focus of the Keep Well approach, which does little to tackle underlying drivers of poor health.

> *"In terms of why it didn't work, so it doesn't tackle the fundamental causes of health inequalities. By preventing one cause of death or one cause of morbidity, it doesn't prevent all causes. The fundamental inequalities in income, wealth and power in society that drive a whole range of disease processes through embodiment, they wouldn't be addressed by pharmaceutical interventions."*
>
> *(P17, Public Health Specialist)*

Most interviewees also discussed the Community Link Worker programme, the social prescribing intervention that began as a pilot in Deep End practices in 2014 but was then rolled out nationally. Community Link Workers were generally highly regarded, with one Deep End GP describing them as a "lifesaving support" (P10, Deep End GP) and the third sector leads also recognising the vital role these workers have in communities.

> *"What's successful about it is that things are joined up…there's a real clear pathway of support, and it stops these cliff edges of transition points… because that is often what we see in all areas of policy… it's transition points where people are really stumbling, and I think that referral on, everything being quite seamless from the GP, that trusted point of contact, I think it keeps relationships trusted with GPs, who are obviously a primary source of support in people's lives."*
>
> *(P14, Third Sector Lead)*

The only caveat a few interviewees had about Community Link Workers was that evaluation of their impact on GP workload and health outcomes was challenging, and that they had been rolled out before compelling evidence of their impact was available.

> *"We're a long way from being able to actually demonstrate that link workers have a tangible impact on people's health outcomes. I think on people's wellbeing, on people's sense of agency, on people's sense that they have been listened to, there is evidence link workers make a difference. It's harder, I think, to prove that link workers make any actual concrete, tangible difference to the levels of health inequalities in Scotland."*
>
> *(P15, Third Sector Lead)*

The final Scotland-wide intervention mentioned by several interviewees was the Welfare Advice and Health Partnerships. Like the Community Link Worker programme, these practice-attached financial advisers also started as a pilot intervention in a few Deep End practices in 2016 before being scaled up nationally. Again, all the Deep End GPs welcomed these new roles as being incredibly helpful to support people experiencing financial stress.

> *"In my view every doctor constantly needs to ask, 'how are our patients coping?', 'would they benefit from getting their household income assessed?', 'are there any grants available to maximise it, or any more benefits?'. And we got the money advice workers and, yeah, they are so fantastic."*
>
> *(P6, Deep End GP)*

Three local-level interventions were mentioned by interviewees. These were the Deep End Pioneer Scheme, Govan SHIP and the Attached Alcohol Nurse project. The Deep End Pioneer Scheme ran between 2016 and 2020 as part of the Scottish Government's GP Recruitment and Retention Fund, with the aim of improving GP recruitment and retention in deprived areas [96,107]. It was highly regarded but did not receive sustained funding. One Deep End GP recognised the challenge faced by the scheme in demonstrating its long-term value in the context of short-term budget constraints.

> *"I think one of the problems is that the whole NHS works in a really cash-strapped environment. So, even if a project seems to be successful, if there is no money around you can't blame Glasgow, or maybe even Scotland, because people have to make hard decisions day by day about what they can fund and they can't fund…but if we invest in these doctors, we will recruit, we will retain, we will save hospital beds in the future because the patients will be better looked after. But to give the evidence for that is very difficult."*
>
> *(P10, Deep End GP)*

Another interviewee who was familiar with the Deep End Pioneer Scheme pointed out that one challenge with pilot projects like this is that only practices already functioning at a reasonable level are able to take part. This is perhaps another facet of the inverse care law.

"There's a bit of a vicious circle there around those who have the least capacity to engage with some of these projects are sometimes the ones who would most need them but they just don't have the headspace to be able to do that. And we found that with the Pioneer scheme that the Pioneer fellows were allocated to those practices who could demonstrate that they would provide a supportive environment for the fellows."

(P9, Public Health Specialist)

As highlighted in the previous section, the Govan SHIP project involved enhanced MDT working. Like the Deep End Pioneer Scheme, Govan SHIP was viewed as a helpful model by several interviewees, although with concerns about the cost of scaling up more widely.

"The Govan SHIP project…was interesting but actually expensive because you were investing in GP time. It was very GP-heavy from that point of view. It required quite a lot of engagement from other services. But that was helpful. I think we could… well, if we were able to work far closer with our HSCP colleagues, we could enable some of that."

(P8, GP in leadership role)

Practice-attached alcohol nurses were introduced in Glasgow to specifically address increased mortality due to alcohol use in areas of concentrated socioeconomic disadvantage. This initiative, once piloted at a local level, was subsequently rolled out across NHS Greater Glasgow and Clyde (GG&C). One interviewee mentioned this as a good example of targeted resource.

"[This was] targeted resource based on where the high prevalence for alcohol harms were and that is totally socially patterned – [you are] five times more likely to die from an alcohol-related problem in a Deep End area than in a more affluent area in Glasgow. So they piloted that and then it got rolled out, and now it sits across GG&C. I mean, there's still only six nurses for the whole city, but there's been an independent evaluation carried out, qualitatively, which showed really positive results."

(P4, Primary Care Academic)

Interviewees reflected on the success (or otherwise) of initiatives to tackle the inverse care law. Sustainability concerns were discussed in relation to funding (eg with Govan SHIP) and evaluation. In the extract below, a public health specialist describes the way in which a lack of robust independent evaluation of interventions negatively impacted future funding decisions, and therefore the sustainability of these interventions.

"Things are much more likely to be rolled out or sustained if they're cheap, if they're well evaluated, the evaluation is independent and…seen as robust, but also if the voices promoting that are seen as credible and constructive. I think, sometimes, for some of the other initiatives, such as [Govan] SHIP, the evaluation hasn't necessarily been that robust, that independent, and the advocates for it haven't necessarily negotiated that very successfully. As a result, they haven't been seen favourably by government."

(P17, Public Health Specialist)

3. Impact of the 2018 Scottish GMS contract

When considering the context of the inverse care law in general practice in Scotland, most interviewees – and all of the GPs and primary care academics – discussed the 2018 Scottish GMS contract. None believed that the new contract adequately accounted for the increased complexity and workload in deprived areas.

Some interviewees made the point that the second phase of the contract was still to be implemented.

"The hope is…that phase two instead will begin to address the deprivation aspects of general practice by matching workforce according to need. Now how that will be achieved I think is very unclear because it needs a meaningful way of being able to measure workload, of being able to recruit and retain in areas that need more GPs."

(P6, Deep End GP)

The introduction of health board or HSCP-employed extended multidisciplinary teams, such as pharmacists, into GP practices as part of the first phase of the new contract was intended to free up GP time to deal with more complex medical issues. But interviewees did not feel that this new workforce had addressed the inverse care law.

Other interviewees noted the importance of the National Resource Allocation formula (NRAC) as a key constraint to a fairer distribution of resources.

"The NRAC formula and the way in which it operates, along with the concerns raised by GP practices in areas of concentrated deprivation about the extent to which the primary care formula, NRAC and various other resource methodologies actually capture the needs, might be at risk of perpetuating that inverse care law."

(P9, Public Health specialist)

Several interviewees pointed out the limitations of independent contractor status in relation to efforts to address the inverse care law. It was noted that GPs could make money by having large list sizes, but that it would be difficult to provide quality care in deprived areas with this approach. This was also cited as a reason why politicians were reluctant to provide any additional funding to GPs in deprived areas.

"…there have been some issues [with] some GPs earning high amounts and, in my view, not spending enough on their patients, and the independent contractor status allows you to do that, and I guess generally we don't have that many checks and balances."

(P2, Deep End GP)

However, it was also noted that the independent contractor status allows considerable scope for innovation and flexibility and, when GP partnerships work well, they can provide excellent value for money. Furthermore, interviewees were mindful of the resistance to any change to the independent contractor model from within the profession.

4. Impact of the Scottish Deep End Project

Interviewees were asked their views and perspectives on the impact of the Scottish Deep End Project. Many of the interviewees (10 out of 17, see Appendix 4) had been involved in previous Deep End projects in some capacity, either directly (in the case of Deep End GPs) or indirectly (eg involved in evaluations of Deep End projects or on advisory groups).

Discussions revolved around the advocacy role that the project plays for the most disadvantaged communities, and for practitioners working in these communities. Interviewees also recognised the work of the Deep End project in relation to the service developments mentioned in this report, as well as education and research.

Interviewees talked about the importance of educating future GPs on the salience of the inverse care law and its manifestations in primary care and beyond. Work conducted with Deep End GPs at the University of Glasgow – which includes widening participation initiatives as well as undergraduate, postgraduate and CPD content – was described as seminal in achieving this.

"I think certainly within Glasgow it's been linked up quite closely with the university…and we've been able to have fellows and training through that. So we've been able to train doctors of the future so there's a knowledge of what the inverse care law is. I mean, that was never part of my education as a medical student or as a doctor."

(P8, GP in leadership role)

Interviewees recognised the important contribution of the Deep End group as a catalyst for connecting GPs working on similar issues in areas of concentrated socioeconomic deprivation and advocating for patients living in these areas.

"I think what [the Deep End project] has done is shone a light on the importance of primary care in those areas and provided a really powerful network for the GPs involved so that they have been able to connect with one another and speak with a collective voice."

(P5, Third Sector Lead)

The vital role of research in Deep End projects was emphasised by interviewees. For example, this Deep End GP described the importance of developing an evidence base that can inform future practice in areas of concentrated socioeconomic disadvantage.

"We've demonstrated over that time that the Deep End is very useful in being able to generate an evidence base for what works well in terms of different models of care, or generate a research base in terms of what we…know and…don't know about working in a deprived area and how can we do things differently."

(P6, Deep End GP)

Similarly, another Deep End GP noted the extent to which health inequalities and topics related to the social determinants of health had become mainstream within medical education and GP training, and the role of the Deep End group alongside these shifts.

"When I trained there was nothing about deprivation, there was nothing about the need for…practitioner support, but also patient support, trauma-informed care, ACEs [adverse childhood experiences]. All of these things didn't happen because of the Deep End but the Deep End is part of a movement that fitted well into the times and the Deep End has made a difference. The voices got heard."

(P10, Deep End GP)

This quote from a public health specialist with previous involvement in Deep End projects summarises the range of impacts that the Scottish Deep End group has contributed to since it began in 2009.

"I think [the Deep End] has been really positive in terms of research, service development, the testing out of new models. So some of the things around… attached workers, the money advice workers, really, really brilliant projects. I think it's been really positive around peer support and development of skills. I think the educational component that sat alongside the Pioneer scheme, which was very much linked into Deep End, was really good."

(P9, Public Health Specialist)

5. Interviewees' suggestions for change

Interviewees were invited to consider suggestions for change. They made recommendations for policy and practice, which we have presented as three subthemes: funding of primary care, proportionate universalism and health professional training.

Funding of primary care

The importance of a well-resourced primary care system was mentioned by several interviewees as key to overall NHS efficiency, safety and quality. These recommendations resonate even more strongly in the current NHS climate with cuts to spending and an ageing population.

> *"What [patients] need is easy access to a high-funded, high-quality primary care system, so that they can then make better use of the rest of the NHS, and it will be more efficient, and it will be a much safer, a much higher-quality NHS…that means a strong primary care system, a really strong, well-staffed, well-resourced primary care system, with adequate resources in areas of highest need, and that's not what we have at the moment."*
>
> *(P6, Deep End GP)*

Proportionate universalism

The concept of proportionate universalism – universal services that are delivered with an intensity and resource proportionate to the level of need – was suggested by several interviewees as the obvious response to the inverse care law in general practice.

> *"I think you probably do need…proportionate universalism, so…you uplift everyone but you uplift in the most deprived areas even more."*
>
> *(P11, Primary Care Academic)*

Health professional training

Finally, interviewees noted the importance of enhanced training for health professionals to support and enable them to work in an equity-oriented way. Trauma-informed care was specifically mentioned by a couple of interviewees as an approach to health care that is particularly important in areas of socioeconomic disadvantage where the prevalence of interpersonal trauma is highest. The key principles of a trauma-informed approach to care are safety, trust, choice, collaboration and empowering people's decision-making abilities. The importance of continuity of care to build trust was also emphasised.

> *"What I would want is a one-point access for mental health, an assessment [by] a mental health practitioner, and then from there a decision where the patient has to go, and then the understanding with continuity of care that our patients can access the service themselves. I know that's a dream but if we don't have that we just retraumatise our patients each time."*
>
> *(P10, Deep End GP)*

Summary

In our interviews with 17 key stakeholders, we found widespread knowledge and understanding of the inverse care law, and interviewees identified the same interventions as the scoping review. Lack of sustainable funding for these interventions was repeatedly raised as a problem. In addition, most felt that the new Scottish GMS contract was not helping to tackle the inverse care law.

The Scottish Deep End Project was felt to have played a key role in patient advocacy and in giving GPs working in very deprived areas a collective voice. It was also felt to have played an important role in education, research and service development.

FINDINGS 3: THE INVERSE CARE LAW IN SCOTTISH GENERAL PRACTICE TODAY

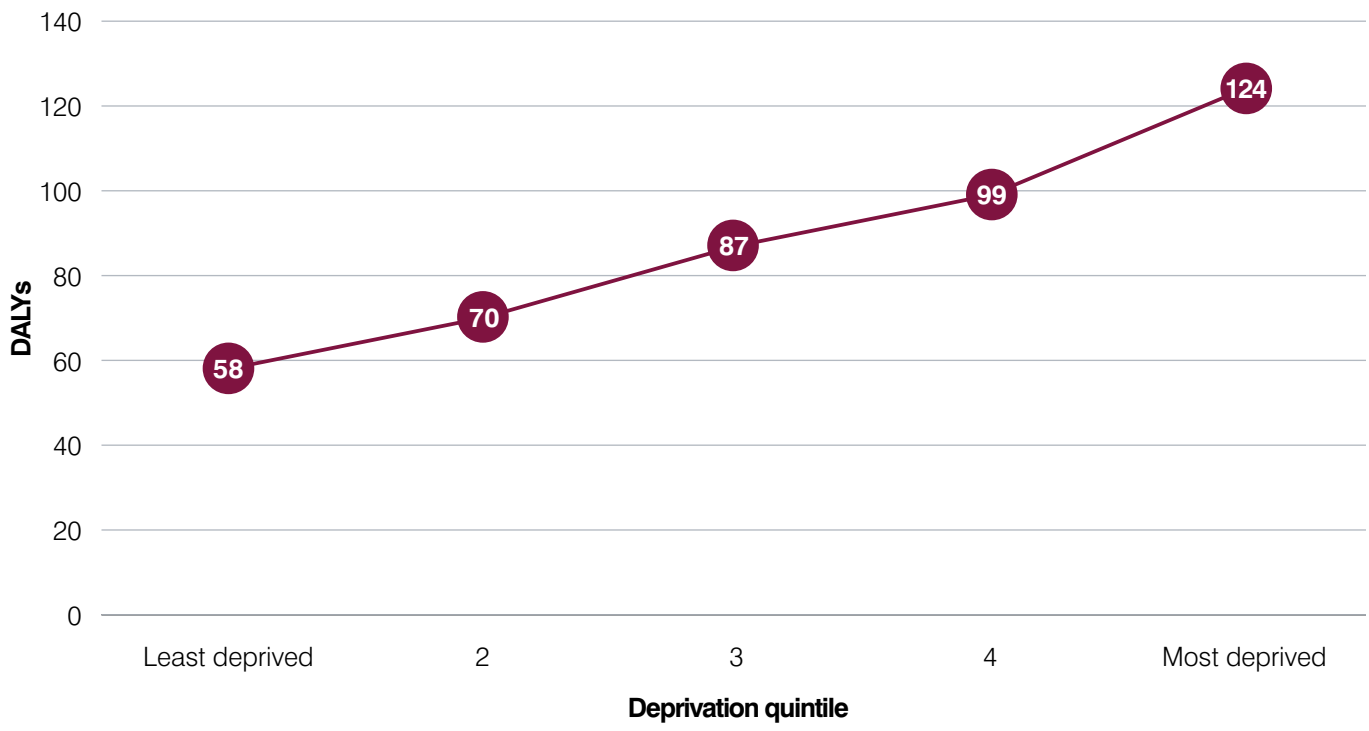
In this section we summarise the most recent evidence available of the ongoing existence of the inverse care law in Scotland. We follow the example of the Health Foundation report on the inverse care law in England [6] by focusing on three components of care – need, supply and quality.

Need

The need for health care varies within and between populations and is shaped by a range of factors, including age, gender, socioeconomic conditions, race and ethnicity. However, the social determinants of health – the conditions in which we are born, grow, live, work and age [34] – are widely considered to be key drivers of health care need, and this need is generally higher in more socioeconomically deprived areas [108].

Disability-adjusted life years (DALYs) is a measure of the burden of disease that combines years of life lost (YLLs) due to premature mortality and years of life lost due to time lived in states of less than full health, or years of healthy life lost due to disability (YLDs). Figure 2 shows previously unpublished data from 2019 requested from Public Health Scotland (as part of the Scottish Burden of Disease Project [109]) on DALYs across socioeconomic quintiles of the Scottish population, demonstrating an increasing burden of disease in more disadvantaged areas, as measured by the Scottish Index of Multiple Deprivation (SIMD).

Figure 2: Rising burden of disease with greater socioeconomic deprivation

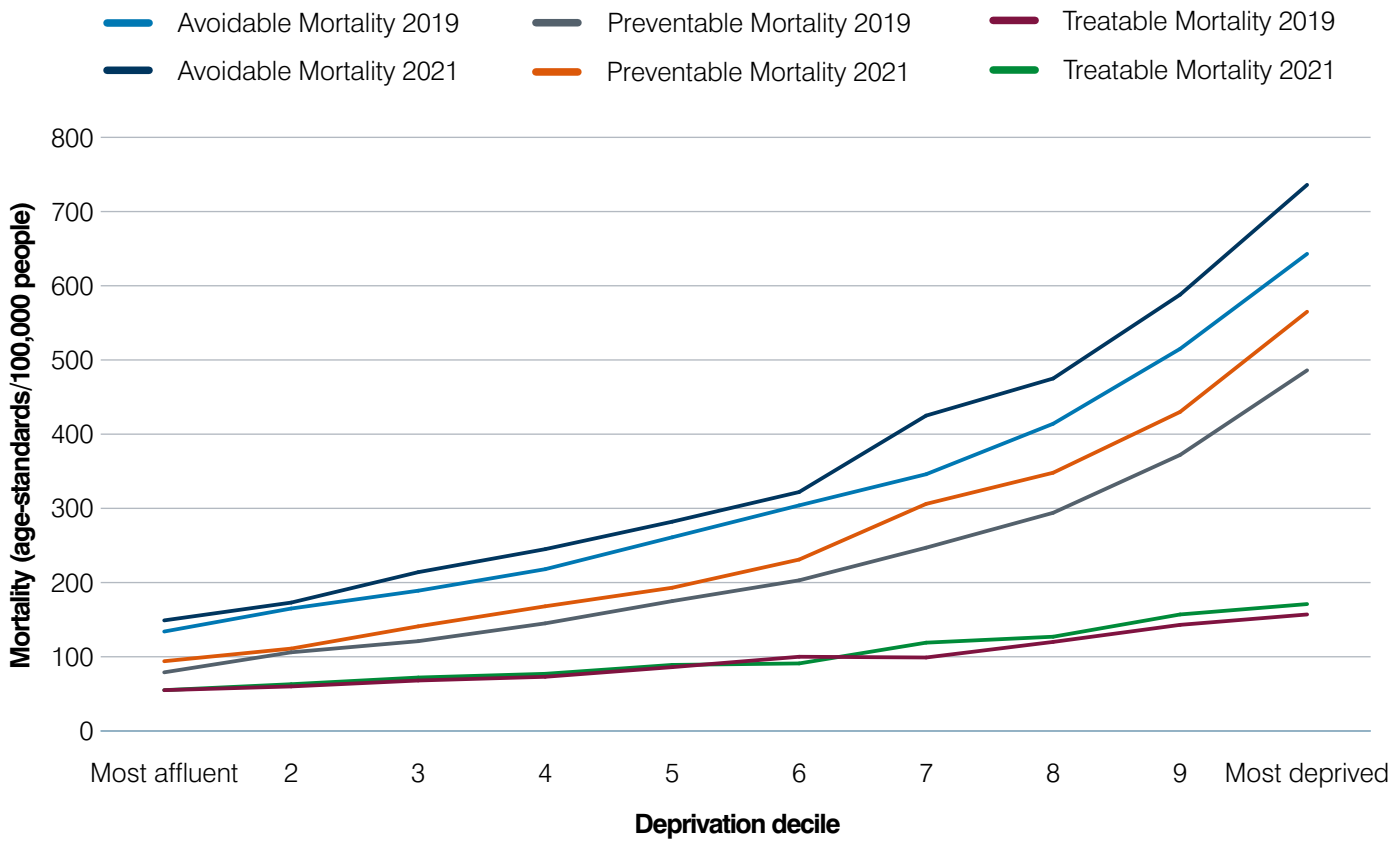


Source: Public Health Scotland 2019 [109]

Figure 3 shows recent data on avoidable mortality, broken down as preventable and treatable mortality, in 2019 and 2021 [110], as accessed from the National Records of Scotland [111]. Preventable mortality is defined as deaths that can be mainly avoided through effective public health and primary prevention interventions, while treatable mortality is defined as deaths that can be mainly avoided through timely and effective health care interventions, including secondary prevention and treatment.

Avoidable mortality is the sum of deaths defined as either preventable or treatable. Avoidable, preventable and treatable mortality all increase significantly with increasing levels of deprivation. Clearly general practice and primary care have an important role to play in both prevention and treatment, and thus avoidable mortality overall.

Figure 3: Avoidable mortality by deprivation decile in Scotland, 2019 and 2021



Source: National Records of Scotland 2022 [111]

Supply

The supply of medical services in general practice includes the number and type of clinical and administrative staff in the workforce, the location, size and quality of general practice premises, and the funding available to pay for services. The total number of general practices providing services to patients in Scotland has reduced over the last decade from 997 practices in 2012 to 905 practices in 2023 [112]. At the same time, the number of patients per estimated Whole Time Equivalent (WTE) GP in Scotland has increased rapidly. There were 245,193 more patients registered with general practices in 2022 than in 2012 [112], and the average number of patients per estimated WTE GP increased from 1,499 to 1,687 [113].

Alongside this decrease in practice numbers and increase in patient numbers, the capacity of the GP workforce in Scotland has fallen. Since 2013 the estimated WTE GP workforce has fallen by 5.4% – a reduction of 196.7 WTE GPs in 2023 [114]. These sustainability pressures have driven changes to the contractual landscape of general practice in Scotland, with more practices handing back their contracts to health boards, and a growing number formally closing their practice lists to new patient registrations (now nearly one in 10 practices across Scotland) [112]. Data on these practices is not routinely analysed by deprivation, so we do not know if there is any pattern to these closures.

The broader context is one of a declining generalist workforce in stark contrast to an increasing specialist (consultant) workforce, which is as evident in Scotland as it is in the rest of the UK [115]. To assess the supply of general practice in relation to socioeconomic disadvantage, we have sought data on both resourcing (funding) and workforce, as well as premises.

Resourcing

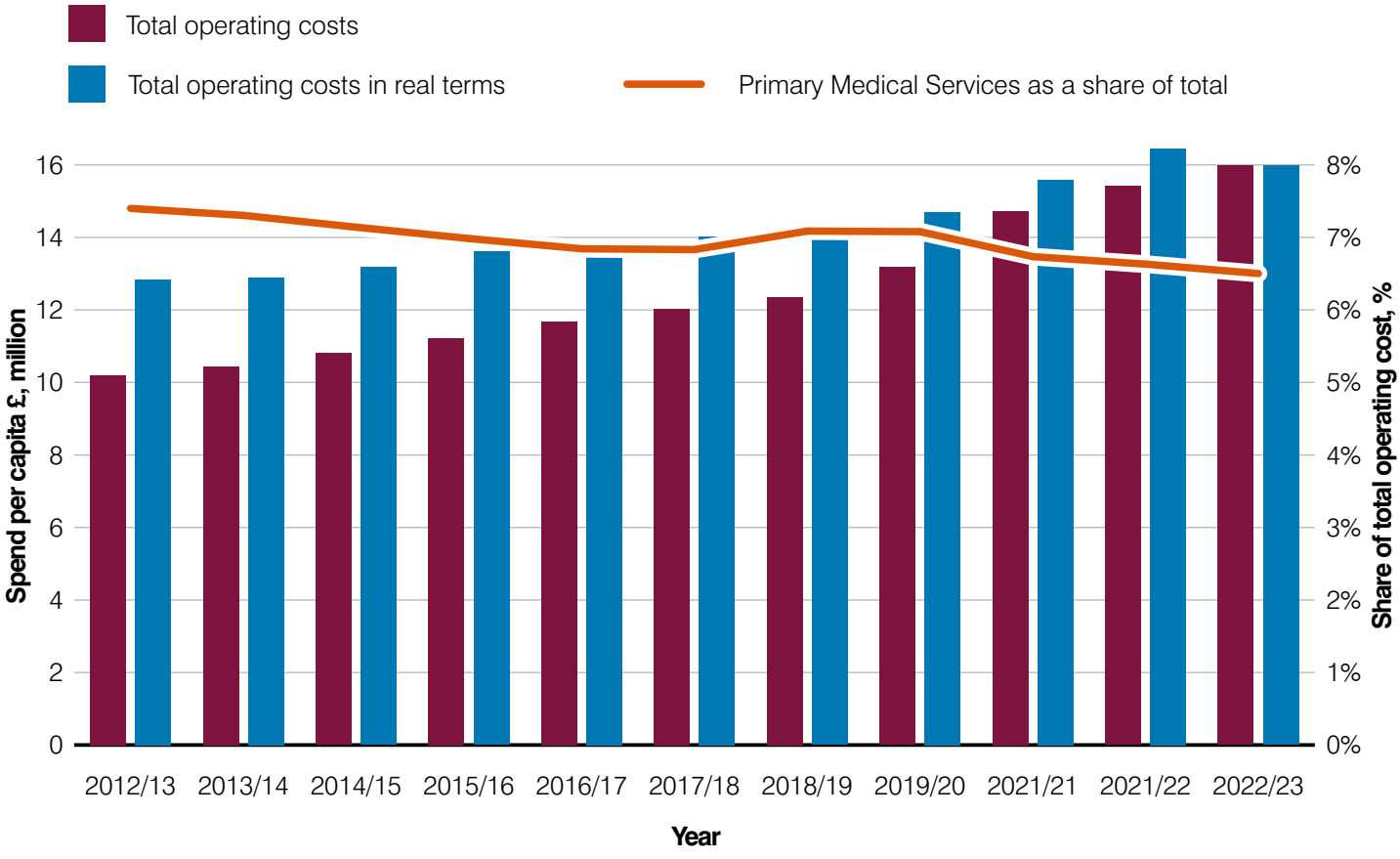
General practice resourcing in Scotland, as in the rest of the UK, is complex and has multiple streams, some managed by GPs as independent contractors and some managed by Health and Social Care Partnerships (HSCPs), including community staffing that was in place before the 2018 Scottish GMS contract and new posts that have been created since 2018 with funds from the Primary Care Improvement Fund (PCIF). The latter will be addressed in the next section on workforce. This section will first consider the wider context of overall funding of general practice in Scotland, and then summarise the impact of the new contract on general practice in deprived areas.

Overall funding of general practice

According to estimates from the Royal College of General Practitioners (RCGP), Scotland has historically received the lowest percentage spend on general practice across the four nations of the UK [116]. The longstanding RCGP campaign to invest 11% of the overall NHS budget into general practice – where the vast majority of NHS patient encounters take place – has not been achieved.

More recent data (see Figure 4 below) on primary medical services expenditure in Scotland as a share of total operating costs is in keeping with the RCGP estimates and shows an approximate figure of 6.5% of overall NHS spend on general practice for 2021/22.

Figure 4: Health board expenditure on primary medical services per capita and as a share of total operating costs



Source: Public Health Scotland 2023 [117]

Data on health board expenditure on primary medical services according to deprivation is not available.

Box 1: The funding of general practice services in Scotland

National Resource Allocation formula

The NHS Scotland Resource Allocation Committee (NRAC) developed the Scottish Resource Allocation formula between 2005 and 2007. It is used in the allocation of around 70% of the total NHS budget between the 14 health boards, providing funding for Hospital and Community Health Services (HCHS) and GP prescribing. The NRAC formula uses a weighted capitation approach but, in keeping with many other population-based funding models, it is demand driven, with little attempt to adjust for unmet need. Furthermore, it uses a comparatively limited range of economic indicators.

General Medical Services (GMS) funding

Most practices in Scotland are GMS-contracted practices run by GPs, with a small number of locally negotiated contracted practices (known as 17C) run by GPs, and even fewer health board-run practices (called 2C). Of the £989.4m paid to 923 general practices in 2021/22, the Global Sum was the largest payment (£670.4m, 68%). The Global Sum is allocated to practices by estimating potential workloads based on their patients' age, sex, and area-based deprivation weightings, as well as the additional costs of delivering general practice in remote and rural areas. Global Sum payments are a contribution towards the independent contractor's costs in delivering essential and additional services, including staff costs.

New 2018 Scottish GMS Contract

A new GMS contract was introduced in 2018, aiming to refocus the GP role as 'expert medical generalist', with general practice at the heart of a health care system characterised by multidisciplinary team (MDT) working. Previous Quality and Outcomes Framework (QOF) payments, which represented around 20% of total GP funding in 2014/15 (the final year of the QOF in Scotland), were rolled forward into the Global Sum. A **Practice Income Guarantee** protected practices from losing funding under the new formula, and a minimum earnings expectation protected GP income.

Further funding is available through **Enhanced Services,** including nationally specified services like vaccinations and the extended hours scheme, **Premises,** which involves reimbursement of expenses based on an estimate of the rental value of the property, and **Seniority Payments,** intended to be part of the earnings of individual GPs to reflect experience.

A new Scottish Workload Formula (SWF) was applied as part of Phase 1 of the new contract, alongside the introduction of GP clusters (see Findings 3 – Quality) and extended MDTs (see below). Deloitte, who provided the economic modelling for the workload formula, indicated that the most deprived SIMD decile was under-represented in its analysis and, under section 2.4 of its report, outlined the reasons why deprivation funding might be underestimated by the SWF.

Primary Care Improvement Fund

The GMS contract involved a Memorandum of Understanding (MoU) between the Scottish Government, the Scottish General Practitioners Committee (SGCP) of the British Medical Association, integration authorities (IAs) and health boards. The MoU was refreshed in 2021 to cover 2021–2023, setting out six priority service areas that IAs would focus on, in partnership with health boards and GPs: Vaccination Transformation Programme (VTP), pharmacotherapy, Community Treatment and Care (CTAC) services, urgent care, additional professional roles (including mental health workers) and Community Link Workers (CLWs).

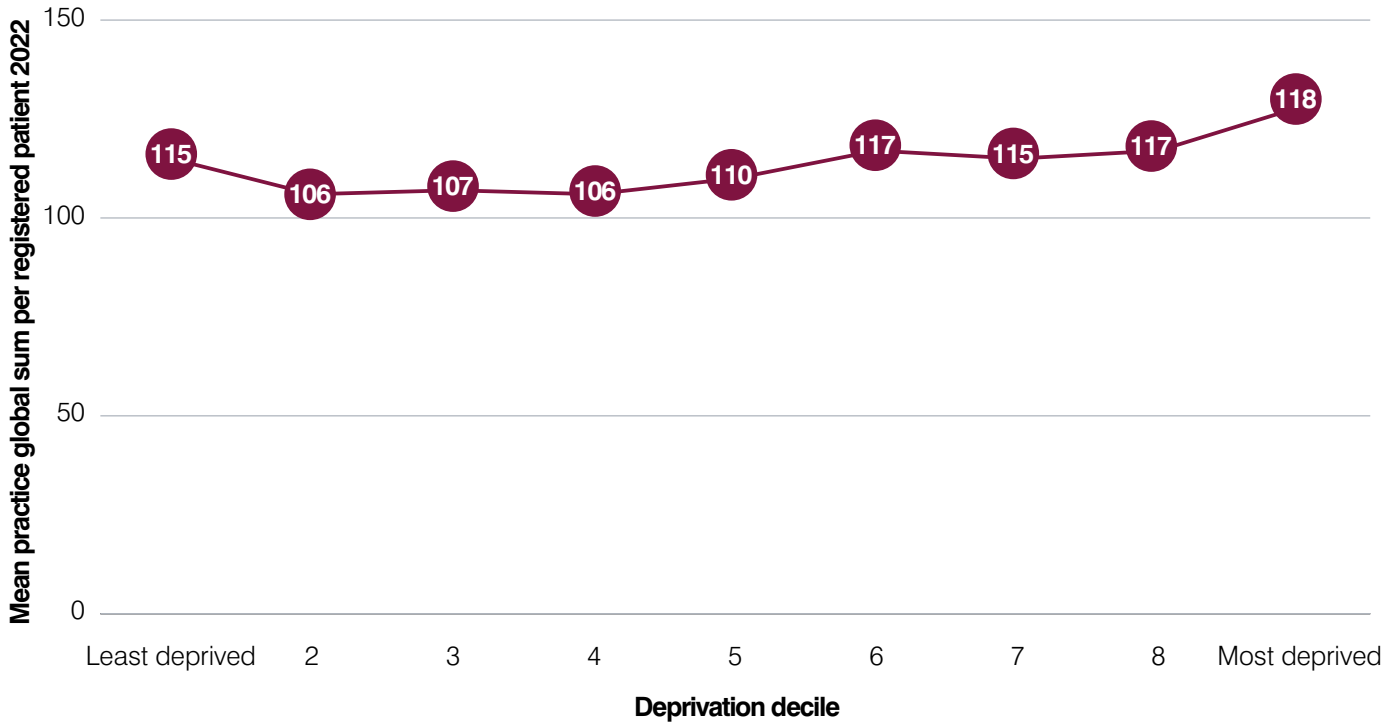
Funding to support the implementation of the MoU was allocated to IAs through the Primary Care Improvement Fund (PCIF), with locally agreed Primary Care Improvement Plans (PCIPs) setting out how implementation would be achieved. PCIF funding for the extended MDT (£190m in 2023/24) is allocated to Health and Social Care Partnerships (HSCPs) rather than directly to practices.

Impact of the 2018 Scottish GMS contract on funding in deprived areas

We requested data for 2022 on Global Sum payments to GP practices according to practice deprivation from Public Health Scotland, as well as workforce data (see below). As shown in Figure 5, Global Sum payments per registered patient were relatively uniform across deprivation deciles, and did not match the steep social gradient in patient need (Figures 2 and 3 above). We were unable to adjust the Global Sum data in the way that the Health Foundation report did in England (it adjusted for need based on local area health data) because we did not have information on which practices participated in the survey.

However, given that patients in deprived areas have higher levels of mental health problems, more multimorbidity, consult more frequently than those in more affluent areas [118] and have more complex problems (spanning physical, mental and social) that they want to discuss with the GP [3,118], it would seem axiomatic that consultation workload is likely to be higher in deprived areas, which is clearly not reflected in the Global Sum payments. Further work is required on ways of adjusting GP practice payments by deprivation using national data sets.

Figure 5: Unadjusted Global Sum payments by practice deprivation



Source: Public Health Scotland [10]

The circles show the mean practice Global Sum payment per patient in pounds sterling for each deprivation decile.

Workforce

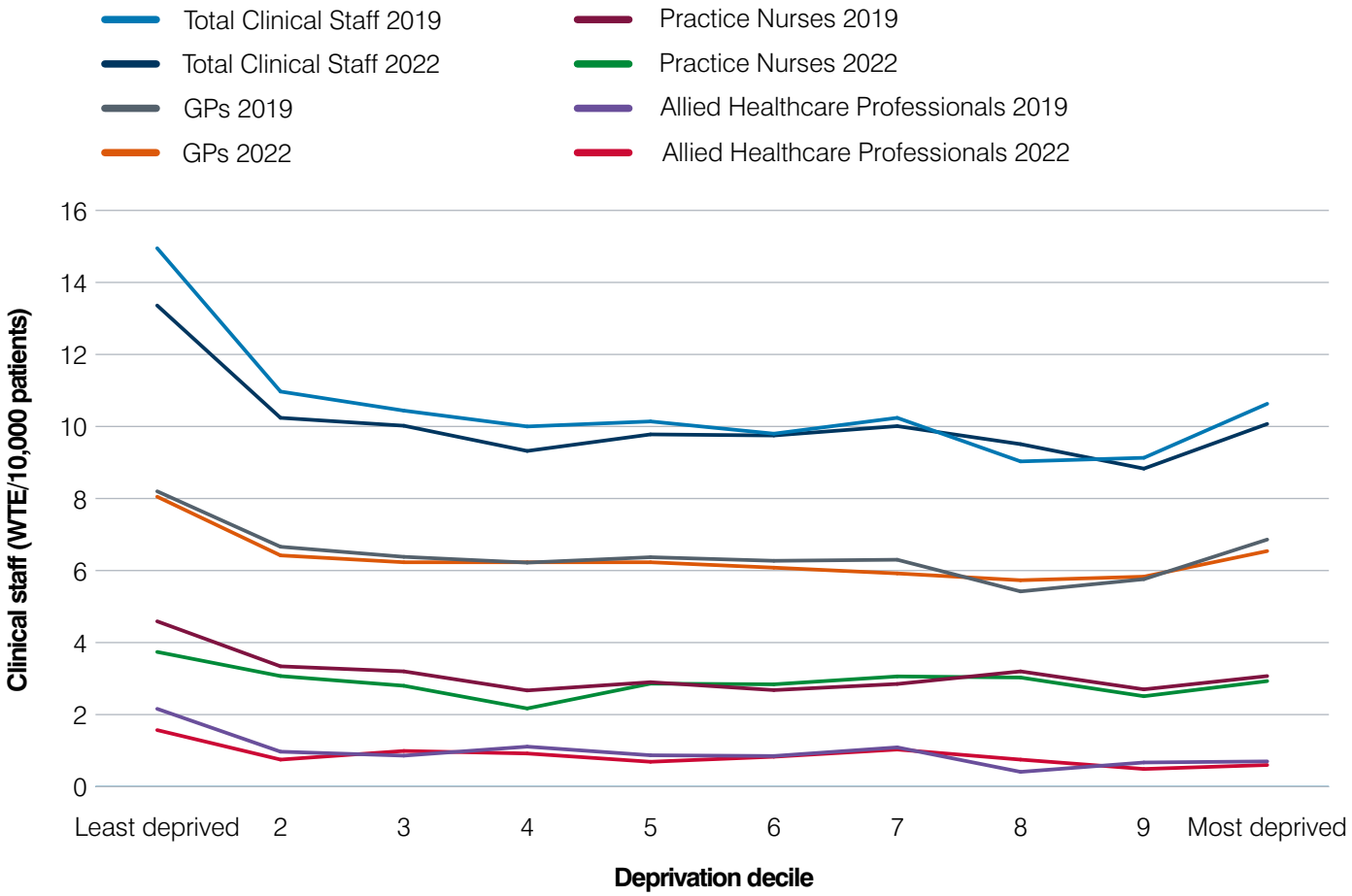
This section will consider the distribution of both the practice-employed workforce and the newer HSCP-employed MDT workforce (resourced through the PCIF and enacted through the local PCIPs). We will also reflect on the Scottish Government's Golden Hello scheme to incentivise recruitment of the GP workforce to certain under-resourced areas.

Practice-employed workforce

We requested a secondary analysis of the available GP workforce data (2019, 2022) from Public Health Scotland (PHS) by SIMD deprivation deciles [110]. Based on these recent voluntary workforce surveys by PHS, Figure 6 shows the number of estimated WTE staff per 10,000 patients across a number of staff categories: GPs, practice nurses, other general practice clinical staff, and all clinical staff (allied health care professionals).

For all practice-employed clinical staff, the number of WTE staff per 10,000 patients is lower in the most deprived decile compared to the least deprived decile.

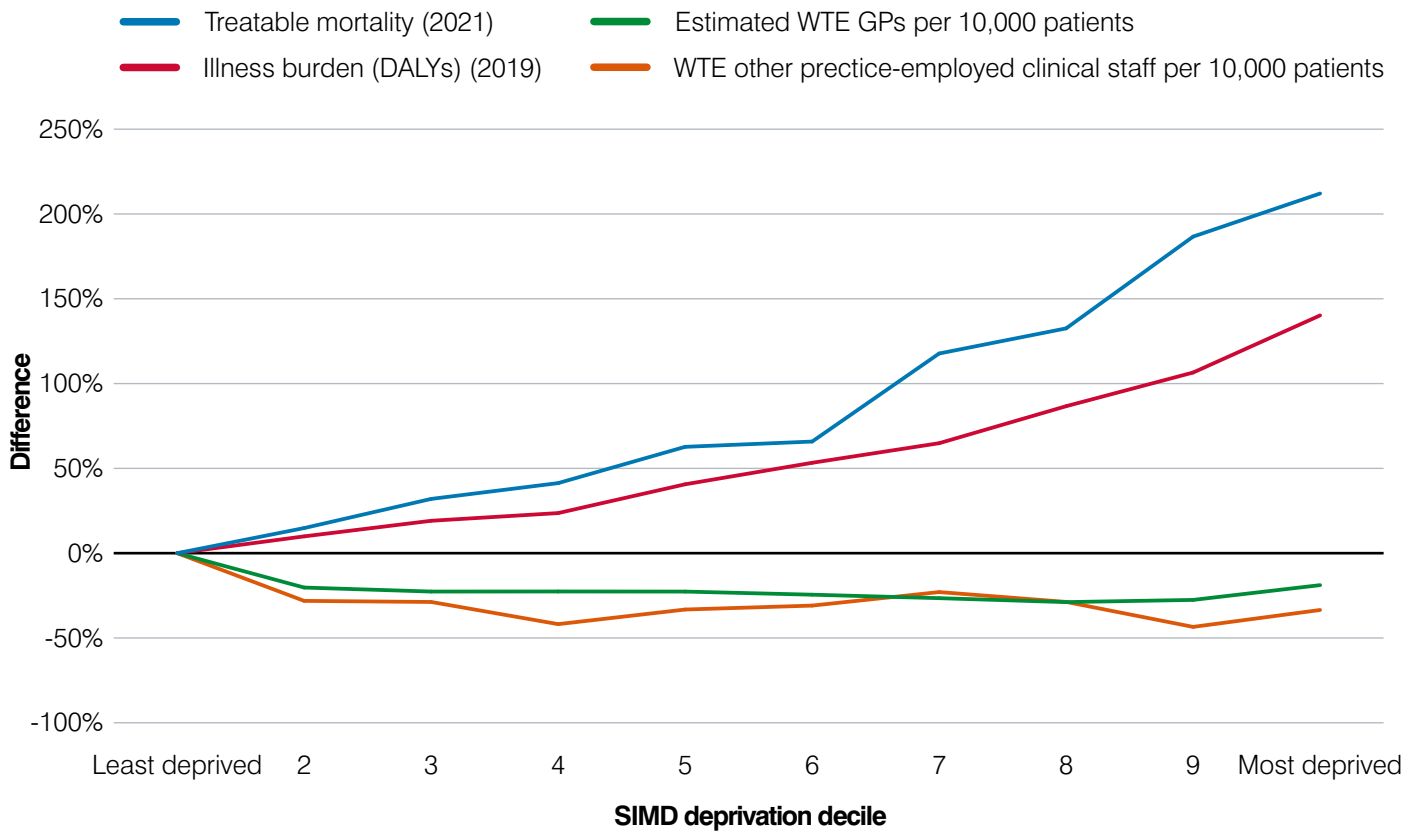
Figure 6: Practice-employed clinical staff per 10,000 patients by SIMD decile in 2019 and 2022



Source: Public Health Scotland 2023 [10,119]

Clearly, in both 2019 and 2022, there was a substantial mismatch between the need for health care (as demonstrated in Figures 2 and 3) and the supply of health care (as shown in Figure 6). This mismatch according to deprivation level is depicted in Figure 7 using two measures of need (illness burden and treatable mortality) and estimated WTE clinical staff numbers in 2022, as a percentage of the values for decile 1 (least deprived practices).

Figure 7: Comparison of estimated WTE clinical general practice workforce per 10,000 patients in 2022 and health needs (illness burden and treatable mortality) by SIMD decile



Source: Public Health Scotland 2023 [10,109,119]

HSCP-employed workforce

As described above, the PHS GP workforce survey data only counts staff who are practice-employed. This section considers the new HSCP-employed extended MDT staff working in general practice, most of whom have joined since the 2018 GMS contract (see Box 1). According to Scottish Government figures, almost 5,000 new WTE staff within the extended MDTs have been recruited since the rollout of the new contract [120].

As noted in Box 1, funding was allocated through the Primary Care Improvement Fund (PCIF), with locally agreed Primary Care Improvement Plans (PCIPs) setting out how implementation would be achieved [121]. However, there was no national requirement or directive for HSCPs to specifically consider or prioritise deprivation in their local allocations of the new extended MDT staff negotiated under the 2018 contract. There was an intent for CLWs to be targeted at areas of highest deprivation first, but it did not follow through in ringfenced funding. This meant that all HSCPs had to pay for CLWs from within their NRAC budget share, along with all other MoU services, so any spending on CLWs would therefore mean less for other services [122].

The approach allowed flexibility in how the PCIF was spent locally across all the contract priority areas, but it had disproportionately negative impacts on HSCPs with higher levels of deprivation where the need for CLWs is greatest. The risk of this approach was explicitly highlighted by Glasgow City HSCP where around 80% of Scotland's Deep End practices are located [123].

The issue was then exacerbated by the second Memorandum of Understanding (MoU2) letter to HSCPs in 2021 when the decision to prioritise three of the six contract services was made. These were the Vaccine Transformation Programme, pharmacotherapy and Community Treatment and Care (CTAC) services. CLWs, along with urgent care and additional professional roles, were effectively deprioritised [124].

The end result has been that decisions taken at HSCP level on how to allocate their workforces have been constrained by competing priorities within one budget at a local level, and then by prioritisation of selected services at a national level. This has had a significant impact on the ability of HSCPs to fulfil their explicit role and duty to address health inequalities at a local level [125].

Glasgow City HSCP, where the largest number of Deep End practices are situated (77% of the total in Scotland), has not distributed most of the new clinical MDT staff by practice deprivation, apparently due to shortages of available MDT staff, constraints on funding, and variations in the capacity of practice premises to accommodate additional staff [110].[1]

Instead, a large proportion of the MDT services in Glasgow City are being provided through hubs, health centre treatment rooms and other venues such as community centres, vaccination centres, schools and patients' homes.

The HSCP's pharmacy teams are based in a combination of hubs and practices, with the distribution of pharmacists to practices based on weighted registered patient lists, which, although not a direct measure of deprivation, could reflect higher need in the practices in the most deprived neighbourhoods, based on the surrogate markers of chronic disease. However, the only element of the primary care improvement plan (PCIF) that directly allocates staff to practices using a deprivation-based model is the community links worker programme.

On the other hand, Edinburgh HSCP has prioritised deprivation in its allocation of new MDT staff (see Box 2).[2]

This is an example of a local approach to addressing the inverse care law and the implementation gap that could potentially be replicated more widely. In terms of the other health boards and HSCPs in Scotland, we could not find any information on how new MDT staff are being distributed. Therefore, in general, it is unclear from the data available to us how HSCP-managed services and funds are allocated according to local population need, and there is no ongoing requirement of HSCPs to specifically report on the impact of health inequalities in their PCIP trackers. Understanding the workforce distribution data is made more complex by the fact that MDT roles often cover more than one practice, sometimes spanning a wide geographical area that can comprise both deprived and affluent areas (even in Glasgow where the majority of Deep End practices are situated).

[1] Personal communication from Gary Dover, Assistant Chief Officer, Glasgow City HSCP (July 2023)

[2] Personal communication from David White, Primary Care Strategic Lead, Edinburgh HSCP (June 2023)

Box 2: Edinburgh HSCP's approach to addressing health inequalities through the PCIF

The 2018 Scottish GMS contract allocated national resources, based on population share, to each Health and Social Care Partnership (HSCP). The guidance set out in the Memorandum of Understanding (MoU) emphasised local variation in how the funds were to be used and, while exhorting plans to account for deprivation, there was nothing specific to support any allocation to areas with high levels of economic disadvantage. Therefore, Edinburgh HSCP took the decision to weight the allocation locally, according to deprivation and, to a lesser extent, the very frail elderly (agreed locally at a higher baseline of over 85 years old).

Edinburgh HSCP covers a growing population of around 600,000 people, with significant variation in socioeconomic demographics, plus a large student and tourist population. This diversity drives variation in the workload challenges faced by GP practices. The HSCP has employed five categories to describe workload challenge and each of the 70 practices is allocated to one of these. Edinburgh has nine practices in the High Deprivation/ Low-Mid Age category, including five Deep End practices and a dedicated Homeless practice.

To support interprofessional relationships and consensus around the emerging approach to local investment, an Edinburgh Leadership and Resource (L&R) group was established through the Edinburgh Integrated Joint Board (IJB), which oversees the HSCP. On the basis of evidence that deprived and very frail elderly patients disproportionately drive general practice workload, it achieved a consensus across Edinburgh that practices serving these populations would receive additional funding.

The practices in the most deprived areas were also recognised to be more at risk in terms of sustainability, and there was an explicit collective interest to maintain stability across all practices. (*"The worst thing that can happen to a practice is to become unstable, and the second worst is that your neighbouring practice becomes unstable.*") It was also agreed that there would be baselining of all existing additional discretionary funding streams available (eg 17C). This ensured that, although not all practices started from a level playing field in terms of prior resource allocation, they would all have been treated equitably by the end of the investment period (3–4 years). Proposals were discussed across Edinburgh primary care prior to implementation, achieving a consensus that did not advantage the majority.

The PCIF allocation methodology was as follows: 5% was reserved and distributed according to the number of people on each practice list who were in the most deprived quintile of the population, based on SIMD; 5% was reserved to give each GP cluster a financial platform to begin to develop shared services (subsequently dropped and reinvested); 2% was reserved and distributed to practices related to the 85+ years population. A table of the financial implications for all Edinburgh HSCP practices was shared to facilitate transparency around allocation methodology and amounts. This table is still updated and shared regularly. The remainder of the PCIF was allocated in terms of new WTE staff, according to list size and Global Sum payments, which should account for both high age and deprivation. As extended MDT staff were recruited, there was further recognition that many practices with high deprivation were effectively put to the top of the queue.

Key factors in enabling this approach were a commitment to transparency, fairness, robust dialogue about equality versus equity, strong and established interprofessional relationships within the locality, and distributed leadership in deciding how the PCIF would be allocated. The agreed approach was shared with all GP practices across the HSCP to explain the rationale for adopting it.

More data is required on the local distribution of PCIF-funded MDT staff in different health boards and HSCPs. However, because there are no mechanisms to ensure equitable distribution of HSCP-employed staff, it is likely that they are not distributed in line with population health need.

Other key elements of the 2018 GMS contract have not been quantitatively evaluated for their impact on health inequalities. At best, they are likely to have had no impact. At worst, they may have exacerbated the inverse care law. Specifically:

- Vaccine Transformation Programme (VTP) – responsibility for all vaccination has been removed from general practice with, as yet, unknown impact on access/uptake in the most socioeconomically deprived groups.
- Many services (eg phlebotomy, wound care) have been moved from general practice into community treatment and assessment services with no evaluation of impact on access by the most socioeconomically deprived groups.
- Pharmacist support – no evaluation of uptake/access according to socioeconomic deprivation.
- Allied health professionals – no evaluation of uptake/access according to socioeconomic deprivation.

Recruitment incentives – Golden Hellos

In 2014/15, the Scottish Government introduced additional one-off payments – called Golden Hellos – as a financial incentive for GPs to work in harder-to-recruit-to areas. These included remote and rural practices, practices with the highest proportion of patients living in the 15% most deprived areas, and special circumstances where there were particular recruitment difficulties. To date, the funding has not been evaluated in terms of its impact on recruitment (or retention), so it is not possible to comment on the effectiveness of the policy to address the inverse care law through workforce supply.

Premises

In November 2017 the Scottish Government published a national code of practice for general practice premises, with the launch of the GP Premises Sustainability Fund in November 2018. This fund aimed to reduce one of the potential risks associated with taking on a GP partnership (where GP partners owned their building). In February 2019 the value of the fund was increased from £30m to £50m.

Approximately 380 GP practices occupy NHS-owned health centres while the remainder are in roughly 530 properties that are either owned by GPs or leased from private landlords [126]. In 2021/22 the Scottish Government set aside £5m from the PCIF to make improvements to existing GP premises, including premises improvement grants to GP contractors who own properties or lease from private landlords, along with funding for the digitisation of paper GP records to release space, improved ventilation and increased space in NHS-owned or leased premises to support MDTs [126].

It is likely that there have been more new primary care premises built in more deprived areas (typically in multidisciplinary health centres) because there is less suitable existing estate in these areas, but we could not find any data on this. Nor could we find any evidence of specific policy intent in relation to addressing health inequalities through the targeted supply of additional premises, although health boards do take account of deprivation and population needs in their strategic assessments of capital projects.

Quality

Since the QOF was withdrawn in 2016, the quality of general practice in Scotland has become more challenging to measure against the specific disease areas previously prioritised under the framework. A recent BMJ study suggested that the removal of these financial incentives was associated with reductions in recorded quality of care in 10 of the 16 quality indicators examined 3 years after the QOF was abolished [127]. However, this study did not look at changes in these indicators by deprivation, so it is not known if the situation is worse in practices in more deprived areas.

The new Scottish GMS contract also has an explicit vision to improve quality of patient care through the formation of GP clusters and the expansion of the new MDT, supporting them to 'work to the top of their licence' and provide first-contact clinical care. This, and other aspects of the contract, was envisaged to reduce GP workload and enable them, as 'expert medical generalists', to spend more time on patients with undifferentiated illness or complex care needs (such as multimorbidity). Reducing health inequalities was an explicitly stated aim of the new contract [11].

Progress in the implementation of the GP clusters has been slow, even prior to the pandemic [128,129]. Qualitative interviews with cluster leads and national stakeholders in primary care reported that the needs of patients with complex problems are not being met by the new contract [130], and no one interviewed felt that it has addressed health inequalities. Similarly, interviews with GPs and new MDT staff reported challenges in implementing the new contract and integrating new MDT staff into general practice. In deprived areas insufficient resources to deal with the high numbers of patients with complex multimorbidity remained a key issue, and GPs reported no decrease (and often an increase) in workload [130].

Interviews with patients found that few had heard about the new contract but many reported ongoing difficulties regarding GP access, limited face-to-face GP appointments, short consultations and a lack of continuity of care, and these issues were particularly concerning for patients with multiple complex problems from deprived areas [131]. A bespoke survey of more than 1,000 patients showed lower satisfaction and enablement and poorer outcomes in GP consultations in urban deprived areas compared with other areas [118].

SUMMARY

In this report we have presented our findings on the inverse care law in Scotland, based on a review of policies and interventions to reduce health inequalities through general practice and primary care, along with qualitative interviews with key stakeholders and secondary analysis of previously unpublished quantitative data.

From our literature review we found that, since devolution in 1999, there has been a plethora of policies introduced by the Scottish Government around reducing health inequalities. However, in keeping with the 2023 Health Foundation report *Leave no one behind* [106], we found an implementation gap between policy ambition and reality on the ground. We identified and analysed 20 interventions that have attempted to address health inequalities in general practice. Only four are ongoing (three at national level and one at local level), with uncertainty over their long-term sustainability, and evaluation of these interventions was often limited.

The Scottish Deep End Project, a collaboration between academic and front-line GPs working in the most socioeconomically disadvantaged areas, was one of the three ongoing national-level interventions. It was also a driving force behind the other two (Community Link Workers and Welfare Advice and Health Partnerships having started as Deep End pilots).

Interventions that enhance financial or social support have the strongest evidence to support them. Success is more likely if new roles are embedded within practice teams and there is good practice team engagement and support, along with relational continuity with patients, clarity of roles, clarity/sustainability of funding arrangements, adequate practical support (room space, IT, admin support), sustainability of linkage to third sector partner organisations, and learning from monitoring and evaluation.

From our interviews with key stakeholders, we found that interviewees identified the same key interventions as the scoping review. Lack of sustained funding was repeatedly raised as a problem. In addition, most felt that the 2018 Scottish GMS contract was not helping to tackle the inverse care law. The Scottish Deep End Project was felt to have played a key role in patient advocacy and in giving GPs working in very deprived areas a collective voice. It was also felt to have played an important role in service and professional development, including research and medical education.

From our secondary analysis of the most recent available primary care workforce data (2022), we show clear evidence that the higher need for health care in disadvantaged areas of Scotland due to poorer health (burden of disease and avoidable mortality) has not been matched by the supply of GPs or other practice-employed clinical staff, and that practice Global Sum payments are relatively flat across deprivation deciles, despite the likelihood that consultations in deprived areas are more complex. The lack of core NHS funding to general practice relative to the acute sector, and the underweighting of this funding with regard to deprivation, continues to drive the inverse care law.

The 2018 Scottish GMS contract was a missed opportunity to deliver on the policy of proportionate universalism (through adequately weighted funding for deprivation and through equitable distribution of the new workforce). The new extended MDT workforce – a major part of the contract – had no national directive to match this workforce to the deprivation levels of the local population, with staffing instead being determined locally. In Edinburgh, which has relatively little socioeconomic deprivation, resources were weighted according to deprivation, but this was not done in Glasgow where most Deep End practices are located. The approach taken by other health boards and HSCPs in Scotland is unknown. System levers to address health inequalities – GP clusters, workforce planning, HSCP roles – have not been adequately utilised.

RECOMMENDATIONS

Based on our analysis, we make the following recommendations for national policymakers.

- **The Scottish Government should increase the proportion of NHS budget allocated to general practice and primary care.** The percentage NHS spend on general practice and primary care in Scotland is the lowest in the UK, and remains far lower than it needs to be to meet the needs of patients with complex problems. A substantial increase in funding of general practice in Scotland is urgently required and would likely need to be supported by improved financial transparency and governance arrangements.
- **The Scottish Government and policymakers should ensure that GP funding (via the Global Sum) and staffing are distributed in proportion to population need, following the principle of proportionate universalism.** This means reviewing and updating the Scottish Workload Formula with up-to-date, reliable data and incorporating consideration of unmet need into a revised formula that more accurately captures the impact of socioeconomic disadvantage on general practice workload. Proportionate universalism is frequently cited as a fairer way of distributing resource according to need, but examples of how this can be applied in practice are lacking. There is a need to develop a framework of how proportionate universalism can be applied practically in both policymaking and service design and delivery if this approach is to be adopted meaningfully.
- **The Scottish Government should work with NHS bodies and others to develop and implement a comprehensive and informed long-term workforce plan, which addresses the inverse care law in general practice.** We need more medical generalists who can provide holistic, person-centred continuity of care, particularly for people with multiple long-term health conditions, physical and mental health comorbidities and complex social needs. A strong workforce with generalist skills and training (which includes community nursing and newer members of the extended primary care MDT such as Community Link Workers) is needed most in areas of highest socioeconomic disadvantage. All staff should receive training in equity-orientated, trauma-informed care.
- **Where interventions are working well – such as Community Link Workers and welfare advisers in general practices – the Scottish Government should ensure long-term funding.** Despite being the only ongoing interventions that could be said to specifically address the inverse care law, Community Link Workers and Welfare Advice and Health Partnerships remain on a precarious financial footing, with clear negative impacts for patients, practices and the staff involved.
- **The Scottish Government, NHS Scotland and Public Health Scotland should work together to ensure both rigorous health inequality impact assessments and subsequent monitoring and evaluation of the 2018 Scottish GMS contract and all new policies affecting general practice.** Elements of the 2018 contract, such as sustainability loans, minimum GP and practice income guarantees, and the distribution and uptake of additional resources such as pharmacotherapy, CTAC services and physiotherapists, should be evaluated and monitored in relation to socioeconomic deprivation.
- **The Scottish Government, health boards and integration authorities should maximise the opportunities offered within the 2018 Scottish GMS contract and its next phase of development to address the inverse care law in general practice.** Specifically, this includes matching the capacity and skills of the extended MDT workforce to local population needs, and evaluation and monitoring to better understand the impact of the new models of primary care on health inequalities, with mitigation where negative unintended consequences are revealed.
- **The Scottish Government, HSCPs and health boards should provide additional support to GP clusters to enable them to realise their specific remit to address health inequalities.** This should include adequate data and project support, mechanisms to share best practice, development of a health inequality toolkit and adequate representation on strategic influencing groups.
- **The Scottish Government should increase funding for robust and holistic primary care research to support evaluations of new primary care policy initiatives.** This should include increasing funding to the Scottish School of Primary Care, bringing it proportionately closer to the level of the English School of Primary Care. Robust data collection and evaluation arrangements should be in place before implementation begins.

CONCLUSION

There is some cause for optimism. The final report by the Scottish Government's Primary Care Health Inequalities Short-Life Working Group includes a range of recommendations that, if successfully implemented, will bolster efforts to address the inverse care law in general practice and primary care. The involvement of Chance 2 Change, an expert reference group with lived experience of the impact of health inequalities, demonstrated a commitment to meaningful patient engagement in the policy development process. We hope this will become the norm.

In its Programme for Government in 2023, the Scottish Government stated a commitment to, *"Deliver targeted support to practices serving the most disadvantaged communities in NHS Greater Glasgow and Clyde and work with local areas to ensure vital specialist services such as Community Link Workers can respond to local needs."* The Government's provision of additional 3-year funding to Glasgow City HSCP in 2023 to avert planned cuts to Community Link Worker numbers was evidence of its commitment to this approach.

Finally, the Scottish Deep End Project continues to advocate for the NHS to be at its best where it is needed most, and it is supported in these efforts by the Scottish Government. This is an initiative that has struck a chord internationally, with more than 16 other Deep End groups now set up across the UK and around the world.

The inverse care law is not a given. It is not a law of nature but is rather the result of policy decisions and resource allocation that restrict care on the basis of need. Not only do we believe that a fairer future for general practice provision in the most disadvantaged communities in Scotland is possible, but also that the need for it is increasingly recognised and desired.

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APPENDICES

Appendix 1: Methods

In this section we describe the methods used for the systematic scoping review and qualitative interviews.

1. **Systematic scoping review of academic and grey literature**

We conducted a systematic scoping review to identify interventions and policies that aimed to address the inverse care law in Scotland after the year 2000. This included a systematic search of published and grey literature.

Inclusion and exclusion criteria

We included interventions and policies that targeted general practice and aimed to address the inverse care law, specifically related to socioeconomic inequalities and not other forms of health inequality (eg disparities arising from ethnicity, sexuality, etc).

We were interested in interventions and evaluations at different levels (national, regional and local) focusing on increasing **supply** of health care in deprived areas (eg staffing, financial resources), improving the **quality** of care in deprived areas (eg training, peer support), and improving the **organisation** of care in deprived areas (eg multidisciplinary team (MDT) meetings, referral pathways, improving access). Examples of such interventions include the CARE Plus study (a whole system intervention providing GP training, additional resource for extended consultations, and peer support) [90], the Govan SHIP project (providing additional clinical capacity to enable extended MDT meetings) [93] and the Deep End Pioneer Scheme (supporting GP recruitment and retention in deprived areas through protected time and sharing of learning) [96].

Exclusion criteria were: not Scotland, not general practice (eg other primary care providers such as dental or pharmacy), not targeted to deprived population, no intervention or policy described, conference proceedings, discussion papers, opinion pieces, editorials, the paper is pre-2000, not written in English, and if we were unable to locate or access the paper. We did not specify the type of study, participants or intervention, giving a wide scope in which to identify activities in Scotland. Papers and reports that described policies were included, but we did not evaluate the paper if there was no analysis of the impact of the policy.

Search strategy

Searches were conducted in March 2022 on PubMed, Embase, CINAHL and Web of Science. Our headings were general practice, Scotland, policy/intervention, quality improvement/funding and socioeconomic deprivation. Expanded search terms were chosen using guidance from standard syntax charts, and we employed a validated geographic filter [132,133]. Results were limited to humans, not animals, and to publication from the year 2000 onwards. The final syntax was agreed by the research group and terms were combined. This syntax is included in Appendix 2.

Grey literature search

The grey literature search was necessary to identify papers and reports that would be suitable for inclusion by the same criteria, but were not published in peer-reviewed journals. We employed a systematic approach, following the precedence of Godin et al. in using four search strategies: grey literature databases, customised search engines, targeted websites and consultation with experts. Grey literature databases and relevant websites were identified using the guideline produced by Canada's drug and health technology agency [134] and through consultation with the project team. The Google search engine was employed for site-specific searches. Using the 'site:' search function, links were explored to the first 10 pages (100 results) by a single reviewer, and potentially relevant papers were downloaded. Websites were explored through browsing the site menu and employing internal search engines. Broad terms were used regarding the inclusion criteria – general practice, primary care, inequality and inverse care law. The project advisory group (Appendix 5) was consulted to identify any additional relevant work not identified by the search.

Table: Websites included in grey literature review

Grey databases	Government	Universities	NHS	Third sector/other
EThOS BASE Cochrane GreyNet Zetech Jisc Library Hub Social Care Online Social Science Research Network	Department of Health and Social Care Healthcare Improvement Scotland Scottish Public Health Network Glasgow Centre for Population Health National Institute for Health and Care Research National Institute for Health and Care Excellence Health Protection Scotland	University of Glasgow The University of Edinburgh University of Stirling University of Dundee University of Aberdeen University of St Andrews University of Strathclyde	Public Health Scotland Health board websites (14 in total) NHS Education for Scotland NHS Health Scotland	The King's Fund Nuffield Health The Health Foundation Health and Social Care Alliance Voluntary Health Scotland RCGP Scotland The Queen's Nursing Institute Scotland

Screening and extraction

Papers were uploaded to Covidence software, which helps with duplicate identification, reviewing papers and data extraction. Two reviewers screened the title/abstract and full text. Data was extracted by a single reviewer using a standardised template, with the project lead screening 10% of papers to check for consistency. Separate templates were used for the published literature and the grey literature. Any disagreements were discussed among the research team and decisions were made by the project lead.

Intervention analysis

Papers and reports were organised by the intervention they detailed. After collating the information available from published and grey literature, interventions were assessed to understand their impact and how sustainable they were. This analysis was drawn from the Scottish School of Primary Care's (SSPC) evaluation framework [9], previously used (and independently commissioned) to evaluate the emerging models of primary care transformation in Scotland. It was a two-step process: firstly, understanding the programme theory and expected impacts at the start of the intervention, and secondly, investigating the actual impacts achieved, the learning from the programme and whether the intervention achieved spread and sustainability. This was performed using a template and was conducted by single reviewer, followed by discussion with a second reviewer. Several reports from the grey literature search – relating to policy, recommendations by experts, action frameworks and health board strategies – could not be evaluated with the SSPC framework and are described in more general terms.

Quality assessment

No formal assessment of quality was made because this was a scoping review that included grey literature written for a range of audiences and not peer reviewed. However, interventions were assessed by impact and sustainability.

2. **Qualitative stakeholder interviews**

Study design

Our qualitative study used semi-structured interview data collected from key stakeholders.

Sample and recruitment

The aim was to recruit between 15 and 20 participants for the semi-structured interviews. A flexible approach to sampling was maintained. Of the 24 people initially contacted, 17 expressed a willingness to participate. Individuals who agreed to receive further information about the study were sent an information sheet and consent form via email. The interviews were conducted between 20 May and 22 December 2022. The focus of this study was to explore the views and experiences of key stakeholders about responses to the inverse care law (ICL) in general practice in Scotland over the past 20 years. Therefore, the participants were chosen based on their knowledge and experiences relating to the ICL in the Scottish context.

Data collection

The data was gathered using semi-structured, in-depth interviews to collect the participants' views and personal experiences. The semi-structured interviews used open-ended questions to allow for the in-depth exploration of issues and provide opportunities for follow-up questions. An interview protocol was collated purposely to explore some of the main areas of interest relating to understanding of and responses to the ICL in Scotland over the past 20 years. For example, questions included:

- What is your knowledge and understanding of the inverse care law?
- What interventions and approaches (at national, regional and local levels) do you know of that have been deployed to tackle the inverse care law in Scotland over the past 20 years?
- Why, in your opinion, have some promising initiatives to reduce the inverse care law in Scotland been scaled up (eg Community Link Workers) and others have not (eg Govan SHIP)?
- Would you have any suggestions or recommendations to improve responses to the inverse care law in general practice in Scotland?

To facilitate participation, potential interviewees were given a choice of in-person or online interview. All participants opted for online interviews, which were conducted either on Zoom or Teams. While the interviews were video recorded, only the voice recording was sent to a professional agency for transcription in order to protect the participants' confidentiality and anonymity.

Data analysis

We used reflexive thematic analysis (RTA) [135–139]. RTA differs from other thematic analysis approaches in three main ways: coding reliability, codebook approaches and reflexivity [136]. An important feature of RTA is that, when more than one coder is involved in the analysis, the aim is to approach the data in a collaborative and reflexive way to achieve richer interpretations rather than simply seek consensus [140]. In line with other qualitative methods, RTA does not seek to provide a 'correct answer'. In RTA, themes are not predefined with the purpose of finding codes. Instead, they are identified through the organisation of codes around a central organising concept [136,139]. In the case of this study, the central organising concept was the inverse care law [1].

Braun and Clarke [135,139] have outlined six phases to facilitate analysis using RTA. We use the term phases rather than steps to highlight that this approach is not necessarily linear, and the researcher may move backwards and forwards between phases during the analysis. To facilitate this process and ensure transparency, these phases were completed on NVivo 12 software. The six phases were:

1. Becoming familiar with the transcribed data by reading and re-reading the interview transcripts and engaging with the semantic meaning of the data. During this phase, notes and annotations were made.
2. Developing a coding framework aimed at capturing key aspects of the data, including patterns and analytic ideas that were salient to the research question.
3. Based on the selected codes, themes were identified and developed. These included subthemes that were connected to specific concepts.
4. The themes were reviewed and cross-checked in light of new codes. The relationship between themes was structured by mapping how themes related to one another.
5. Themes were named. This phase was critical in identifying a narrative that encompassed themes and subthemes.
6. The analysis was illustrated, and the results were presented in a clear manner.

Rigour

To ensure the quality of our study, we adhered to the criteria for RTA provided by Braun and Clarke [138,139]. These criteria cover the processes of transcription, coding, analysis and creation of the written report. Some of the relevant practices include ensuring that data has been transcribed with an appropriate level of detail and audio recordings have been checked for accuracy, checking that all data has been considered equally, confirming that all coded items have been collated and all themes have been checked against the original data set, reviewing whether all data has been interpreted rather than summarised and all analysis matches the data set, and stating all assumptions and approaches to thematic analysis [136,138]. We also engaged in researcher triangulation: the main analyst independently coded the transcripts, with a subset of transcripts being coded by a second analyst independently. The two analysts then came together to discuss their coding and their impressions of the data.

Ethics

We interviewed participants from five professional backgrounds: Deep End GPs, GPs with national leadership roles, primary care academics, public health specialists and third sector leads. This project did not require NHS Ethics approval. The study was reviewed by the University of Glasgow College of Medical, Veterinary & Life Sciences Ethics Committee.

Appendix 2: Search strategy

PubMed, MEDLINE

1. General practice [mh] OR Family Practice [mh] OR Community Medicine [mh] OR Social Medicine [mh] OR Comprehensive Health Care [mh] OR Primary Health Care [mh] OR General practitioners [mh]
2. General Practi* [tiab] OR GP [tiab] OR GPs [tiab] OR Primary care [tiab] OR Family practi* [tiab] OR Practitioner* [tiab] OR Communit* [tiab]
3. 1 OR 2
4. Scotland [mh]
5. (scotland* [tiab] OR scottish* [tiab] OR scotland* [ad] OR scottish* [ad])
6. (aberdeen [tiab] OR "aberdeen's" [tiab] OR dundee [tiab] OR "dundee's" [tiab] OR edinburgh [tiab] OR "edinburgh's" [tiab] OR glasgow [tiab] OR "glasgow's" [tiab] OR inverness [tiab] OR (perth not australia*) OR ("perth's" not australia*) OR stirling [tiab] OR "stirling's" [tiab] OR aberdeen [ad] OR "aberdeen's" [ad] OR dundee [ad] OR "dundee's" [ad] OR edinburgh [ad] OR "edinburgh's" [ad] OR glasgow [ad] OR "glasgow's" [ad] OR inverness [ad] OR (perth not australia*) OR ("perth's" not australia*) OR stirling [ad] OR "stirling's"[ad])
7. ("NHS Ayrshire and Arran" [tiab] OR "NHS Borders" [tiab] OR "NHS Dumfries and Galloway" [tiab] OR "NHS Fife" [tiab] OR "NHS Forth Valley" [tiab] OR "NHS Grampian" [tiab] OR "NHS Greater Glasgow and Clyde" [tiab] OR "NHS Highland" [tiab] OR "NHS Lanarkshire" [tiab] OR "NHS Lothian" [tiab] OR "NHS Orkney" [tiab] OR "NHS Shetland" [tiab] OR "NHS Tayside" [tiab] OR "NHS Western Isles" [tiab] OR "NHS Ayrshire and Arran" [ad] OR "NHS Borders" [ad] OR "NHS Dumfries and Galloway" [ad] OR "NHS Fife" [ad] OR "NHS Forth Valley" [ad] OR "NHS Grampian" [ad] OR "NHS Greater Glasgow and Clyde" [ad] OR "NHS Highland" [ad] OR "NHS Lanarkshire" [ad] OR "NHS Lothian" [ad] OR "NHS Orkney" [ad] OR "NHS Shetland" [ad] OR "NHS Tayside" [ad] OR "NHS Western Isles" [ad])
8. ((rural OR highland* OR island*) AND scot*[tiab])
9. (Lothian [tiab] OR lanarkshire [tiab] OR tayside [tiab] OR grampian [tiab] OR Orkney [tiab] OR shetland [tiab] OR Lothian [ad] OR lanarkshire [ad] OR tayside [ad] OR grampian [ad] OR Orkney [ad] OR shetland [ad])
10. 4 OR 5 OR 6 OR 7 OR 8 OR 9
11. (africa [mh] OR americas [mh] OR antarctic regions [mh] OR arctic regions [mh] OR asia [mh] OR oceania [mh]) not (great britain [mh] OR europe [mh])
12. 10 NOT 11
13. Health Policy [mh] OR Health Care Reform [mh] OR Health Care Quality, Access, and Evaluation [mh]
14. Policy [tiab] OR Policies [tiab] OR Intervention* [tiab] OR Program* [tiab] OR Project [tiab] OR Strategy [tiab] OR Strategies [tiab] OR Approach [tiab] OR Reform* [tiab] OR Initiative* [tiab] OR Pilot [tiab]
15. 13 OR 14
16. Delivery of Health care [mh] OR Health care reform [mh] OR Professional practice gaps [mh] OR Health Workforce [mh] OR Health care facilities, manpower and services [mh]
17. Suppl* [tiab] OR Fund* [tiab] OR Financ* [tiab] OR Payment* [tiab] OR Allocation* [tiab] OR "Global Sum" [tiab] OR Capitation [tiab] OR Money [tiab] OR Premise* [tiab] OR Surger* [tiab] OR Practice [tiab] OR Commission* [tiab] OR Access [tiab] OR Workforce [tiab] OR Staff [tiab] OR Doctor* [tiab] OR Nurs* [tiab] OR Pharmac* [tiab] OR prescrib* [tiab] OR Physio* [tiab] OR Service* [tiab] OR Organi?ation [tiab] OR Quality [tiab] OR Appointment* [tiab] OR Servic* [tiab] OR Deliver* [tiab] OR Consultation* [tiab] OR Train* [tiab]
18. 16 OR 17
19. Healthcare disparities [mh] OR Health Inequities [mh] OR Health Status Disparities [mh] OR Health Services Accessibility [mh] OR Health equity [mh] OR Universal health care [mh] OR Socioeconomic factors [mh] OR Social Determinants of Health [mh]
20. Equit* [tiab] OR Inequit* [tiab] OR Inequal* [tiab] OR Unequal [tiab] OR Gap [tiab] OR Gaps [tiab] OR Gradient* [tiab] OR Distribut* [tiab] OR Inverse [tiab] OR "Inverse Care Law" [tiab] OR Under doctored [tiab] OR Depriv* [tiab] OR Disadvantage* [tiab] OR SIMD [tiab] OR "Scottish Index of Multiple Deprivation" [tiab] OR Povert* [tiab] OR Impover* [tiab] OR Access [tiab] OR Econom* [tiab] OR Socioecon* [tiab] OR Shortage* [tiab] OR Poor* [tiab] OR Vulnerab* [tiab] OR Barrier* [tiab] OR Engagement* [tiab]
21. 19 OR 20
22. 3 AND 12 AND 15 AND 18 AND 21
23. Animals [mh] NOT humans [mh]
24. 22 NOT 23
25. Limit yr= 2000-current

Embase, Ovid

1. exp General practice/ OR exp General practitioner/ OR exp General practice registrar/ OR exp Primary medical care/ OR exp Social Medicine/
2. (General Practi* OR GP OR GPs OR Primary care OR Family practi* OR Practitioner* OR Communit*).mp.
3. 1 OR 2
4. exp Scotland/
5. (scotland* OR scottish*).ti,ab,jx,in,ad.
6. (aberdeen OR "aberdeen's" OR dundee OR "dundee's" OR edinburgh OR "edinburgh's" OR glasgow OR "glasgow's" OR inverness OR (perth not australia*) OR ("perth's" not australia*) OR stirling OR "stirling's").ti,ab,in,ad.
7. ("NHS Ayrshire and Arran" OR "NHS Borders" OR "NHS Dumfries and Galloway" OR "NHS Fife" OR "NHS Forth Valley" OR "NHS Grampian" OR "NHS Greater Glasgow and Clyde" OR "NHS Highland" OR "NHS Lanarkshire" OR "NHS Lothian" OR "NHS Orkney" OR "NHS Shetland" OR "NHS Tayside" OR "NHS Western Isles").ti,ab,in.
8. (lothian OR lanarkshire OR tayside OR grampian OR Orkney OR shetland).ti,ab,in.
9. ((rural or highland* or island*) and scot*).ti,ab,in,ad.
10. OR/4-9
11. (exp "arctic and antarctic"/ OR exp oceanic regions/ OR exp western hemisphere/ OR exp africa/ OR exp asia/ OR exp "australia and new zealand"/) not (exp united kingdom/ OR europe/)
12. 10 NOT 11
13. exp Health care policy/ OR exp health care planning/ OR exp Health program/
14. (Policy OR Policies OR Intervention* OR Program* OR Project OR Strategy OR Strategies OR Approach OR Reform* OR Initiative* OR Pilot).mp.
15. 13 OR 14
16. exp Health care delivery/ OR exp Health care quality/ OR exp health care utilization/ OR exp health workforce/ OR exp health care management/ OR exp health care organization/ OR exp health care personnel/ OR exp health care facility/
17. (Suppl* OR Fund* OR Financ* OR Payment* OR Allocation* OR "Global Sum" OR Capitation OR Money OR Premise* OR Surger* OR Practice OR Commission* OR Access OR Workforce OR Staff OR Doctor* OR Nurs* OR Pharmac* OR prescrib* OR Physio* OR Service* OR Organi?ation OR Quality OR Appointment* OR Servic* OR Deliver* OR Consultation* OR Train*).mp.
18. 16 OR 17
19. exp health care need/ OR exp health disparity/ OR exp health equity/ OR exp social determinants of health/ OR exp poverty/
20. (Equit* OR Inequit* OR Inequal* OR Unequal OR Gap OR Gaps OR Gradient* OR Distribut* OR Inverse OR "Inverse Care Law" OR Under doctored OR Depriv* OR Disadvantage* OR SIMD OR "Scottish Index of Multiple Deprivation" OR Povert* OR Impover* OR Access OR Econom* OR Socioecon* OR Shortage* OR Poor* OR Vulnerab* OR Barrier* OR Engagement*).mp.
21. 19 OR 20
22. 3 AND 12 AND 15 AND 18 AND 21
23. exp animals/ NOT exp humans/
24. 22 NOT 23
25. Limit year= 2000-current

CINAHL

1. (MH "Family Practice+") OR (MH "Physicians, family+") OR (MH "Primary Health Care+") OR (MH "Community Medicine+")
2. TX (General Practi* OR GP OR GPs OR Primary care OR Family practi* OR Practitioner* OR Communit*)
3. 1 OR 2
4. (MH "Scotland+")
5. TX (scotland* OR scottish*)
6. TX (aberdeen OR "aberdeen's" OR dundee OR "dundee's" OR edinburgh OR "edinburgh's" OR glasgow OR "glasgow's" OR inverness OR (perth not australia*) OR ("perth's" not australia*) OR stirling OR "stirling's")
7. TX ("NHS Ayrshire and Arran" OR "NHS Borders" OR "NHS Dumfries and Galloway" OR "NHS Fife" OR "NHS Forth Valley" OR "NHS Grampian" OR "NHS Greater Glasgow and Clyde" OR "NHS Highland" OR "NHS Lanarkshire" OR "NHS Lothian" OR "NHS Orkney" OR "NHS Shetland" OR "NHS Tayside" OR "NHS Western Isles")
8. TX (lothian OR lanarkshire OR tayside OR grampian OR Orkney OR shetland)
9. TX ((rural or highland* or island*) and scot*)
10. 4 OR 5 OR 6 OR 7 OR 8 OR 9
11. (MH "Africa+") OR (MH "America+") OR (MH "Antarctic regions+") OR (MH "Arctic regions+") OR (MH "Asia+") OR (MH "Australia+") OR (MH "Indian Ocean Islands+") OR (MH "Pacific Islands+")
12. 10 NOT 11
13. (MH "Health Policy+") OR (MH "Health Service Administration+")
14. TX (Policy OR Policies OR Intervention* OR Program* OR Project OR Strategy OR Strategies OR Approach OR Reform* OR Initiative* OR Pilot)
15. 13 OR 14
16. (MH "Health Care reform+") OR (MH "Health Resource Allocation+") OR (MH "Health Resource Utilization+") OR (MH "Health Manpower+") OR (MH "Nursing Manpower+") OR (MH "Health Personnel+")

17. TX (Suppl* OR Fund* OR Financ* OR Payment* OR Allocation* OR "Global Sum" OR Capitation OR Money OR Premise* OR Surger* OR Practice OR Commission* OR Access OR Workforce OR Staff OR Doctor* OR Nurs* OR Pharmac* OR prescrib* OR Physio* OR Service* OR Organi?ation OR Quality OR Appointment* OR Servic* OR Deliver* OR Consultation* OR Train*)
18. 16 OR 17
19. (MH "Healthcare Disparities+") OR (MH "Health Services Accessibility+") OR (MH "Health Service Needs and Demands+") OR (MH "Social Determinants of Health+")
20. TX (Equit* OR Inequit* OR Inequal* OR Unequal OR Gap OR Gaps OR Gradient* OR Distribut* OR Inverse OR "Inverse Care Law" OR Under doctored OR Depriv* OR Disadvantage* OR SIMD OR "Scottish Index of Multiple Deprivation" OR Povert* OR Impover* OR Access OR Econom* OR Socioecon* OR Shortage* OR Poor* OR Vulnerab* OR Barrier* OR Engagement*)
21. 19 OR 20
22. 3 AND 12 AND 15 AND 18 AND 21
23. (MH "Animals+") NOT (MH "Humans+")
24. 22 NOT 23
25. Limit Year = 2000-current

Web of Science

1. TS=(General practic*) OR TS=(Family Practic*) OR TS=(Community Medicine) OR TS=(Social Medicine) OR TS=(Comprehensive Health Care) OR TS=(Primary Health Care) OR TS=(General practitioners) OR TS=(GP) OR TS=(GPs) OR TS=(Primary care)
2. TS=(scotland*) OR TS=(scottish*) OR TS=(Aberdeen) OR TS=("aberdeen's") OR TS=(Dundee) OR TS=("dundee's") OR TS=(Edinburgh) OR TS=("edinburgh's") OR TS=(glasgow) OR TS=("glasgow's") OR TS=(inverness) OR TS=(perth not australia*) OR TS=("perth's" not australia*) OR TS=(stirling) OR TS=("stirling's") OR TS=("NHS Ayrshire and Arran") OR TS=("NHS Borders") OR TS=("NHS Dumfries and Galloway") OR TS=("NHS Fife") OR TS=("NHS Forth Valley") OR TS=("NHS Grampian") OR TS=("NHS Greater Glasgow and Clyde") OR TS=("NHS Highland") OR TS=("NHS Lanarkshire") OR TS=("NHS Lothian") OR TS=("NHS Orkney") OR TS=("NHS Shetland") OR TS=("NHS Tayside") OR TS=("NHS Western Isles") OR TS=(Lothian) OR TS=(Lanarkshire) OR TS=(tayside) OR TS=(Grampian) OR TS=(Orkney) OR TS=(shetland) OR TS=((rural or highland* or island*) and scot*)
3. TS=(Policy) OR TS=(Policies) OR TS=(Intervention*) OR TS=(Program*) OR TS=(Project) OR TS=(Strategy) OR TS=(Strategies) OR TS=(Approach) OR TS=(Reform*) OR TS=(Initiative*) OR TS=(Pilot) OR TS=(Health Policy) OR TS=(Health Care Reform) OR TS=(Health Care Quality, Access, and Evaluation) OR TS=(Health care policy) OR TS=(health care planning) OR TS=(Health program)
4. TS=(Suppl*) OR TS=(Fund*) OR TS=(Financ*) OR TS=(Payment*) OR TS=(Allocation*) OR TS=("Global Sum") OR TS=(Capitation) OR TS=(Money) OR TS=(Premise*) OR TS=(Surger*) OR TS=(Practice) OR TS=(Commission*) OR TS=(Access) OR TS=(Workforce) OR TS=(Staff) OR TS=(Doctor*) OR TS=(Nurs*) OR TS=(Pharmac*) OR TS=(prescrib*) OR TS=(Physio*) OR TS=(Service*) OR TS=(Organi?ation) OR TS=(Quality) OR TS=(Appointment*) OR TS=(Servic*) OR TS=(Deliver*) OR TS=(Consultation*) OR TS=(Train*)
5. TS=(Equit*) OR TS=(Inequit*) OR TS=(Inequal*) OR TS=(Unequal) OR TS=(Gap) OR TS=(Gaps) OR TS=(Gradient*) OR TS=(Distribut*) OR TS=(Inverse) OR TS=("Inverse Care Law") OR TS=(Under doctored) OR TS=(Depriv*) OR TS=(Disadvantage*) OR TS=(SIMD) OR TS=("Scottish Index of Multiple Deprivation") OR TS=(Povert*) OR TS=(Impover*) OR TS=(Access) OR TS=(Econom*) OR TS=(Socioecon*) OR TS=(Shortage*) OR TS=(Poor*) OR TS=(Vulnerab*) OR TS=(Barrier*) OR TS=(Engagement*) OR TS=(Healthcare disparities) OR TS=(Health Inequities) OR TS=(Health Status Disparities) OR TS=(Health Services Accessibility) OR TS=(Health equity) OR TS=(Universal health care) OR TS=(Socioeconomic factors) OR TS=(Social Determinants of Health)
6. 1 AND 2 AND 3 AND 4 AND 5
7. Limit year = 2000-current

Appendix 3: Example of evaluation summary

Keep Well

National programme of anticipatory care in primary care settings. Launched in 2006 across five Scottish regions with high levels of deprivation, with the stated aim of contributing to a reduction in health inequalities in Scotland by providing health checks targeting people who were 45–64 years old and at particular risk of preventable serious ill health, predominantly heart disease, and offering appropriate interventions, services and follow-up. Funding ended in 2017.

O'Donnell et al. (2012). Delivering a national programme of anticipatory care in primary care: a qualitative study.

Carver et al. (2012). The outreach worker role in an anticipatory care programme: A valuable resource for linking and supporting.

Carver et al. (2012). 'It's just a way of approaching things now': staff perspectives of an anticipatory care programme in Edinburgh.

Sinclair and Alexander (2012). Using outreach to involve the hard-to-reach in a health check: What difference does it make?

FMR Research, on behalf of South West Glasgow CHCP (2010). Exploration of the Community Health Outreach Worker and Health Case Manager roles.

NHS GGC (2012). Evaluation of 'Keep Well' programme in NHS Greater Glasgow & Clyde.

NHS Health Scotland (2014). The impact of Keep Well: An evaluation of the Keep Well programme from 2006 to 2012.

Step 1: Programme theory and expected outcomes

- What was the planned intervention and how did this build on previous work or knowledge?
  - The aim was to specifically target, reach and engage people who were not engaged with health services, and support them to make changes in relation to identified cardiovascular disease (CVD) risk factors (smoking cessation, weight loss and statin therapy).
  - The evidence base for such a health check approach (targeted or otherwise) at the time of programme development was equivocal, and where it was supportive was drawn from single interventions in a trial environment rather than effectiveness evidence from targeted health checks.
- How was the intervention expected to reduce health inequalities?
  - The relative divergence of improvement in CVD outcomes by socioeconomic status was of political concern. It was felt that a targeted CVD screening programme could increase the rate of improvement in the most deprived socioeconomic groups. This would contribute to a reduction in the inequalities in CVD mortality between the most and least well off.
- What were the key components of the intervention?
- Different components – and implemented differently across the country.
- For instance, in South West Glasgow CHCP, two new roles were developed:
  - The Health Case Manager (HCM) provided one-to-one support for people with multiple or complex needs, involving intensive support to encourage patients to take up their referrals to health and wellbeing services.
  - The Community Health Outreach Worker (CHOW) aimed to encourage patients who had not responded to invitations from their GP practice to attend Keep Well screenings and help them to attend other services. CHOW support was more limited, but it involved a larger number of people than the HCM role.
- What were the expected impacts at the start of the intervention?
  - Three theories of change were found to exist across the health boards:
    - Theory 1: Changing the way care is organised and delivered
    - Theory 2: Empowerment and co-production
    - Theory 3: Focusing on clinical risk factors
  - In general, within each health board one of these theories appeared to have driven local planning for Keep Well more than the others. During our interviews, the stakeholders suggested a number of outcomes for Keep Well that were not part of the original programme theory and cannot be explored with available data. These include improved relationships and trust between practitioners and patients, and increased self-efficacy.
- Was the intervention designed, developed or adapted for the specific context of the local area?
  - There was a range of adaptations. Each wave of Keep Well was accompanied by national guidance and annual performance reporting on completed health checks. NHS Health Scotland had a programme management role nationally, which included the provision of support to health boards in operationalising the guidance documents. However, as Keep Well was rolled out across Scotland, each of the waves was accompanied by slightly different guidance, and the programme's theory came to be defined in a variety of ways in different areas, with health boards adapting the programme to local circumstances.

  - Keep Well implementation across Scotland was highly variable in its form, focus, delivery setting and expected outcomes. While there are advantages in local flexibility, the disadvantages include difficulties in evaluating impact and uncertainty about the evidence supporting specific local approaches.
- Were key stakeholders (such as health care staff, patients, carers living in deprived areas) involved in the co-design of the intervention?
  - Not clear

Step 2: Impacts, learning, spread and sustainability

- What actual impacts did the intervention have in relation to the expected impacts?
  - No evidence of impact as a cardiovascular intervention (eg CVD mortality, hospitalisations)
  - A key evaluation finding (NHS GGC report) was extensive variation at three levels:
    - Engaging the population subgroups at highest risk
    - Changing the health literacy, risk factors and behaviour of people who engage
    - Sustaining adherence to any changes after the Keep Well consultation
- Did the intervention and the expected impacts change over time?
  - There were several waves of Keep Well that each brought on new areas and/or general practices and had slightly different requirements: Wave 1 (2006), Wave 2 (2007), Well North (2008), Wave 3 (2009) and Wave 4 (2009). As the programme evolved, it incorporated other population groups and initiatives. A process of mainstreaming began in April 2012 with the aim of making targeted health checks part of normal, permanent practice by 2014. In 2013 the Chief Medical Officer announced that central funding for Keep Well would cease in 2017.
- Were there any unintended (negative or positive) consequences?
  - The Keep Well programme encouraged innovation in the ways primary care sought to contact and engage deprived populations and people likely to be at high risk of CVD. In terms of collaboration between primary care and other services, there is little evidence from local evaluation studies that this improved as a result of Keep Well. Despite this, the stakeholders we interviewed reported that Keep Well had improved working relationships between agencies and raised the profile and understanding of health inequalities locally.
  - The evaluation by O'Donnell et al. identified four underlying tensions in the delivery of an anticipatory care approach through general practice:
    - General practice versus health improvement approaches
    - Medical approaches versus wider social approaches
    - Population-wide approach versus individual targeting
    - Reactive versus anticipatory care
- What was the key learning?
  - The main NHS Health Scotland evaluation outlined three key lessons related to problematic theory underlying the intervention, variations in implementation, and barriers to an effective assessment of impact.
  - Community Oriented Primary Care (COPC) clusters may offer opportunities to improve strategic linkage at all levels and provide more coherent programme support to local health improvement systems.
  - Customised models of anticipatory care are likely to be required for defined subpopulations, building on the successes of the South Asian Anticipatory Care (SAAC) and Carers' pilots.
- Was the intervention worthy of scaling up and spreading (implementation), and did this happen? If not, why not?
  - The intervention was scaled up for a number of years. However, the main NHS Health Scotland evaluation concluded that, due to the high degree of uncertainty about evidence supporting health checks, and where (as in Keep Well) the intervention does not lend itself to short-term process measures as valid proxies for the desired outcomes, a substantial programme such as Keep Well should be implemented in the context of a controlled trial with comparison groups, considering options such as cluster randomisation or stepped-wedge designs.
- Was the intervention sustainable (or likely to be sustainable) in the long term?
  - As above. Keep Well was not sustained in the long term. The available literature does not explicitly state the reasons for this, although the recommendations from the main NHS Health Scotland evaluation give us a strong idea why funding ceased.

Appendix 4: Interviewee characteristics

Participant	Sex	Occupation	Previous involvement in any Deep End projects?
P1	M	Primary care academic	Yes
P2	F	Deep End GP	Yes
P3	M	GP leadership role	No
P4	F	Primary care academic	Yes
P5	F	Third sector lead	No
P6	F	Deep End GP	Yes
P7	M	GP leadership role	Yes
P8	F	GP leadership role	No
P9	F	Public health specialist	Yes
P10	F	Deep End GP	Yes
P11	F	Primary care academic	No
P12	F	Public health specialist	No
P13	F	Deep End GP	Yes
P14	F	Third sector lead	No
P15	F	Third sector lead	Yes
P16	F	Public health specialist	Yes
P17	M	Public health specialist	No

Appendix 5: Project Advisory Group (PAG)

Naureen Ahmad, Primary Care Division, Scottish Government (member of PAG until May 2023)

Colin Angus, lay representative, Scottish School of Primary Care and NHS Research Scotland

Clare Cable, Chief Executive and Nurse Director, The Queen's Nursing Institute Scotland

Fiona McHardy, Research and Information Manager, The Poverty Alliance

Catriona Morton, Deputy Chair (Policy), Royal College of General Practitioners Scottish Council

Sara Redmond, Chief Officer of Development, Health and Social Care Alliance Scotland (the ALLIANCE)

Claire Stevens, Chief Executive, Voluntary Health Scotland

Claire Sweeney, Director of Place and Wellbeing, Public Health Scotland