Health inequalities, multimorbidity, and primary care in Scotland

INTEGRATED CARE

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ABSTRACT

Scotland has an ageing population and the widest health inequalities in Western Europe. Multiple health conditions develop ~10–15 years earlier in deprived areas than in affluent areas. General practice is central to the effective and safe management of such complex multiple health conditions, but the inverse care law has permeated deprived communities ('Deep End' general practices) for the past 50 years. A new, radical, Scottish GP contract was introduced in April 2018, which has a vision to improve quality of care through cluster working and expansion of the multidisciplinary team (MDT), enabling GPs to deliver 'expert generalism' to patients with complex needs. It states a specific intention to address health inequalities and also to support the integration of health and social care. Here, we discuss recent evidence for whether the ambition of the new GP contract, to reduce health inequalities, is being achieved.

KEYWORDS: Scottish GP contract, integration, multimorbidity, health inequalities

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Background

Health inequalities in Scotland

Scotland has the widest health inequalities in Western Europe, with recent data showing that the gap between rich and poor is widening.[1,2] Life expectancy is, on average, 12 years lower in the most deprived decile of the Scottish population compared with the most affluent decile (Table 1). The gap in healthy life expectancy is even larger than this, meaning that people living in the most deprived areas spend over a decade longer in poor health compared with those living in the least deprived areas, before dying prematurely. The Coronavirus 2019 (COVID-19) pandemic also hit the poor the hardest, with death rates in the most deprived 20% of the population being double that of the least deprived (Fig 1).

Multimorbidity and health inequalities

The prevalence of long-term conditions by age is shown in Fig 2a, based on a nationally representative sample of 1.74 million people in Scotland.[6] As age increases, very few people have no long-term conditions, and many have more than one (multiple health conditions).

When broken down by deprivation, it can be seen that those living in the most deprived areas develop multiple health conditions ~10-15 years younger than those in the most affluent areas (Fig 2b). Furthermore, the prevalence of mental health disorders increases with a higher number of physical conditions in individuals, with those living in more deprived areas developing more mental health conditions for any given number of physical health conditions (Fig 2c).[6] The presence of a mental health disorder increases as the number of physical health conditions increases (adjusted odds ratio (OR) 6.74, 95% confidence interval (CI) 6.59–6.90 for five or more disorders versus adjusted OR 1.95, 95% CI 1.93–1.98 for one disorder), and is much greater in those living in more deprived than in less deprived areas (adjusted OR 2.28, 95% CI 2.21–2.32% versus adjusted OR 1.08, 95% CI 1.05–1.11).[6]

The role of general practice

General practice and primary care have a key role in the management of multiple health conditions, being the hub for open-access, generalist-led, holistic care (Box 1). The key features of a strong primary system are:

- **contact:** patients regularly consult their GPs and other primary care staff, and those with multiple health conditions consult substantially more compared those without
- **coverage:** most of the population is registered with a single practice, giving population coverage

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Table 1. Life expectancy and healthy life expectancy in rich and poor areas of Scotland.[3,4]

	Healthy life expectancy (years)	Years in poor health	Total life expectancy (years)
Men			
Richest 10%	72	11	83
Poorest 10%	47	22	69
Difference	**25**	**11**	**14**
Women			
Richest 10%	72	14	86
Poorest 10%	50	26	76
Difference	**22**	**12**	**10**

- **continuity:** general practice provides both informational and interpersonal continuity, and is highly valued by patients with multiple health conditions
- **comprehensiveness:** general practice provides expert generalist care in the prevention and treatment of both mental and physical conditions, across the life-course
- **coordination:** general practice helps coordinate multidisciplinary and specialist care, which can be very fragmented, especially for patients with multiple health conditions.

The inverse care law

Despite the crucial role of general practice and primary care in caring for the population, Scotland, similar to England and many other countries, has long suffered from an inverse care law, whereby the 'availability of good medical care tends to vary inversely with the need for it in the population served'.[7]

Fig 3 shows the mismatch of need in deprived areas with the funding and activity of general practice by deprivation deciles.[8] Despite a two-to-threefold increase in need (as indicated by premature mortality and presence of both physical and mental conditions) from the least to the most deprived areas, the funding of general practice is flat (tending to be higher in more affluent areas) even though the consultation rate increases with deprivation.

This high burden of poor health and multiple health conditions in deprived areas results in higher demand on such practices, with more complex consultations (spanning mental, physical and social problems), more problems to discuss, yet less time to do so than in affluent areas.[9] This results in high GP stress and low patient enablement for those with complex needs, and poorer consultation outcomes.[9,10] The inverse care law in general practice has been likened to a swimming pool, where GPs and patients in the deep end (in deprived areas) struggle to keep their head above water (Fig 4a).

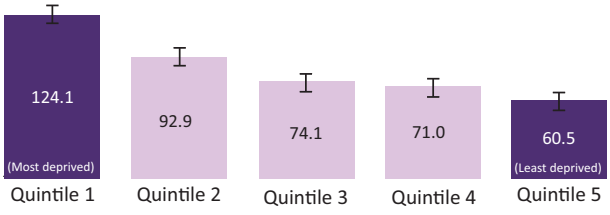

Fig 1. Coronavirus 2019 (COVID-19) death rate and deprivation in Scotland.[5] SIMD = Scottish Index of Multiple Deprivation.

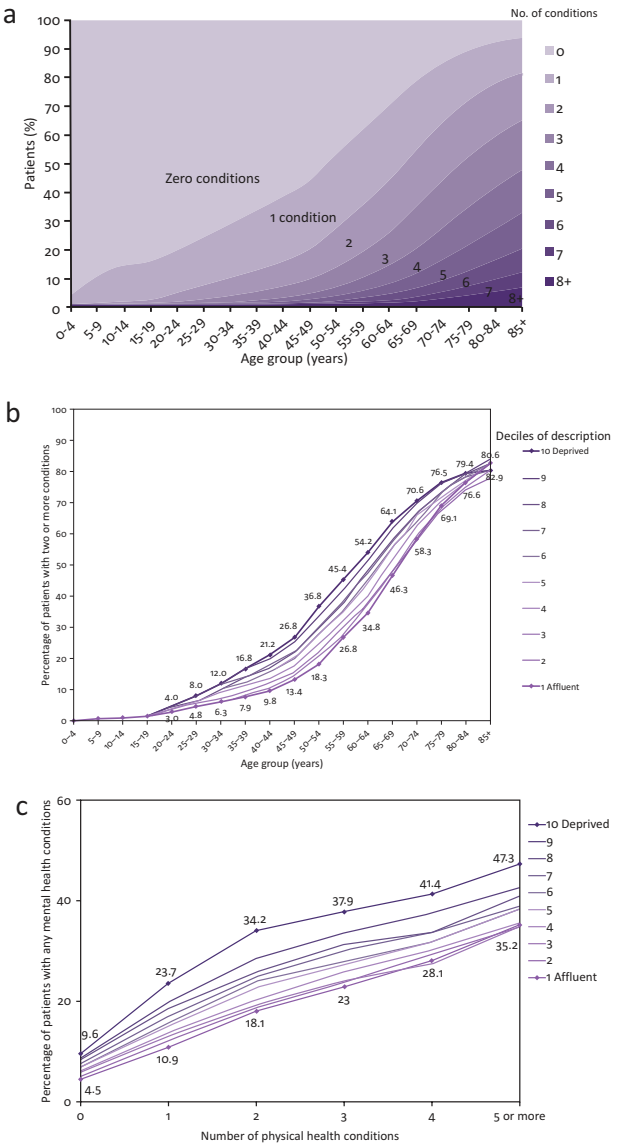

Fig 2. Multimorbidity and health inequalities in Scotland.
(a) Prevalence of the number of long-term conditions by age. (b) Prevalence of multiple health conditions by deprivation. (c) Prevalence of mental and physical health conditions by deprivation. Reproduced with permission from Barnett *et al*.[6]

GPs at the 'Deep End'

In an attempt to respond to the inverse care law, the Royal College of General Practice held a short-life working group on health inequalities in Scotland in 2009, out of which grew the 'Deep End' movement. The Deep End comprises GP clinicians and academics, working in the 100 practices in Scotland serving the most deprived communities.

Box 1. General practice as the hub for the holistic care of patients with multiple health conditions. Courtesy of Graham Watt.

'Hub' features provided by general practice

Contact
Coverage
Continuity
Comprehensiveness
Coordination
Flexibility
Relationships
Trust

'Spoke' and 'rim' services around this hub

Keep Well
Child health
Care of the older person
Mental health
Addictions
Community care
Secondary care
Voluntary sector
Local communities

Deep End GPs work together to advocate on behalf of their patients across a wide range of issues.[11] The swimming pool analogy was used to create the Deep End logo (Fig 4b). Since its formation, the Scottish Deep End movement has grown across the UK and internationally, with 14 Deep End groups across seven countries.

Since its inception, the impact of the Deep End project on policy development and the inverse care law in Scotland is unclear, and work funded by the Health Foundation is underway to assess this.

One development that did come out of the Deep End project was the addition of community link workers to the primary care team in practices serving deprived areas to support social prescribing. Link workers take referrals from GPs and other clinical members of the primary care team and spend time with patients who have social needs to identify these needs and then 'link' them with local community third-sector resources. The Scottish Government set a target of having 250 link workers in general practice in deprived areas, initially in the Scottish National Party (SNP)'s 2016 manifesto and reaffirmed in the 2020 programme for government.

The new Scottish GP contract

In April 2018, a historic Scottish GP contract was formally introduced (although elements of it began in 2016). This was the first time that Scotland had negotiated its own GP contract.[12] A key aspect of the contract was the abolishment of the Quality and Outcomes Framework (QOF), which had been in place across the UK since 2004, and was a pay-for-performance scheme that incentivised GPs to meet a range of indicators of quality in the management of patients with a range of specified long-term conditions. The QOF in Scotland was stopped in April 2016 and replaced with the formation of GP clusters, in which groups of geographically located practices (typically between five and eight) were expected to work together to improve the quality of care for their local population. Each Cluster elects one GP from the practices to be a cluster quality lead (CQL) and each participating practice also has a GP practice quality lead (PQL). Both receive a small amount of protected time to advance the quality improvement (QI) agenda. This involves an 'intrinsic role', in which the CQLs and PQLs develop and deliver QI, and an 'extrinsic role', whereby the CQLs provide local leadership in terms of working with the health and social care partnership (HSCP) to improve the integration of local services.[13]

A second major strand of the new GP contract was the expansion of the extended multidisciplinary team (MDT), which again, although formalised in the contract in April 2018, began to be operationalised from 2016 through a Primary Care Transformation Fund of over

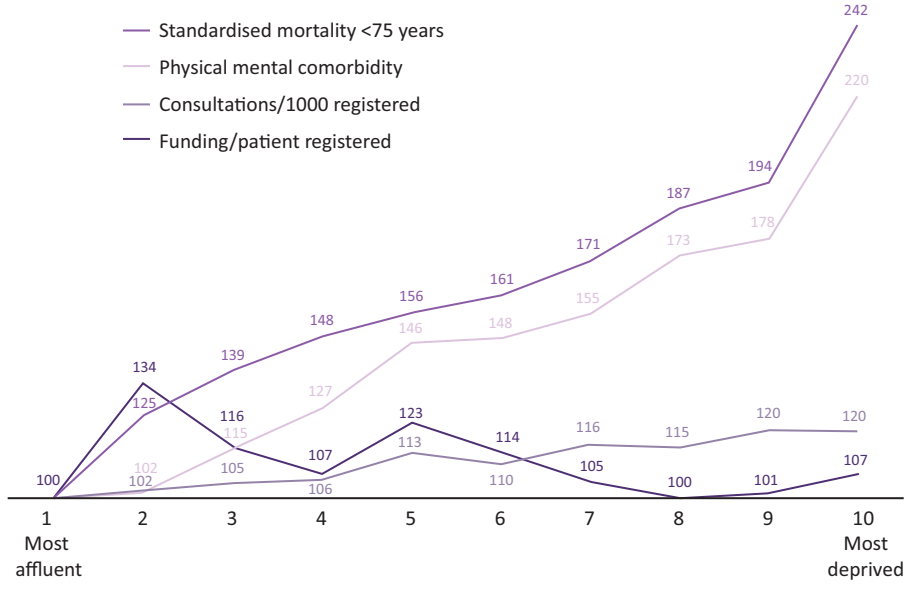

Fig 3. The inverse care law in Scotland (2015). Reproduced from McLean *et al.*[8]

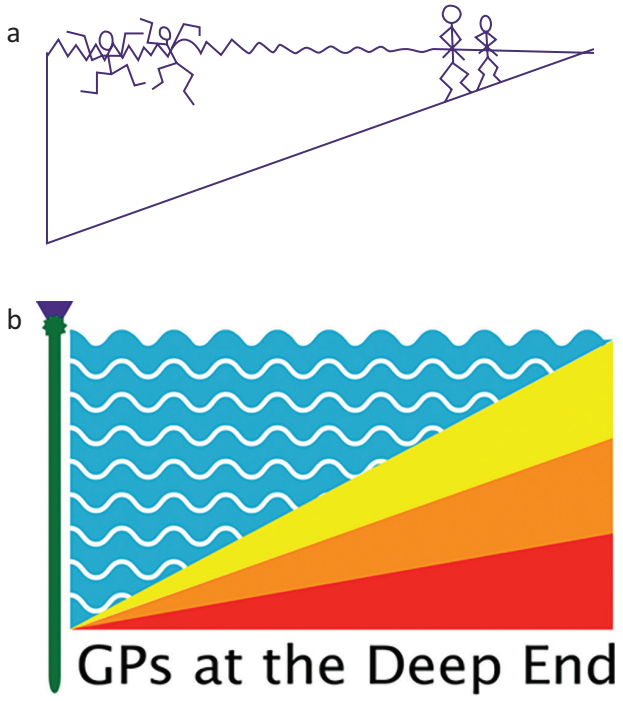

Fig 4. GPs at the deep end because of the inverse care law. (a) The concept of the 'deep end'. (Courtesy of Graham Watt.) (b) The Deep End logo, which has adapted into multiple versions internationally.

£30 million from the Scottish Government for general practices and HSCPs to conduct 'tests of change' of new models of care using additional MDT staff. The stated aims of the new GP contract are to:

- improve access for patients, address health inequalities and improve population health, including mental health
- provide financial stability for GPs, and reduce GP workload through the expansion of the primary care MDT
- redefine the role of the GP as an expert medical generalist focussing on complex care.

Implementation of the Scottish GP contract comprises two Phases. Phase 1 started in April 2018, and included the further rollout of Cluster working and of the extended MDT. Phase 2 was due to start in 2023, but this has not happened for several reasons, including delays in progress of implementation of Phase 1 and the impact of the COVID-19 pandemic. One of the intentions of Phase 2 was to match workforce (capacity) to workload (demand). How workload is to be measured has yet to be defined, but could have a positive impact on addressing health inequalities if measured in a way that captures the additional complex workload of deprived-area general practice. However, it is not known whether and when Phase 2 will be implemented and, indeed, whether it will have the intended impact on reducing health inequalities.

Progress to date

Scottish GP contract

Cluster working

In terms of the progress of the new Scottish GP contract, a national GP survey in 2018,[14] 2 years after the initiation of Cluster working, found that the clusters were up and running throughout Scotland, and were regarded as well organised, friendly and well facilitated, although only 50% of those who responded felt they were productive (Fig 5a). A qualitative study conducted immediately before the COVID-19 pandemic in 2019, and then continued in 2020 after the first lockdown found similar results.[15]

More recently, a qualitative study with senior primary care national stakeholders and CQLs conducted between March and May 2021 found that, although there was general support for the initial aims of the contract, interviewees unanimously felt that progress on Cluster working had been slow, even before the pandemic. Clearly the pandemic then slowed progress further. Lack of time, poorly developed relationships and insufficient infrastructure and wider support were the key barriers.[16] These findings are consistent with both recent and past reports on GP cluster working by Healthcare Improvement Scotland.[17,18]

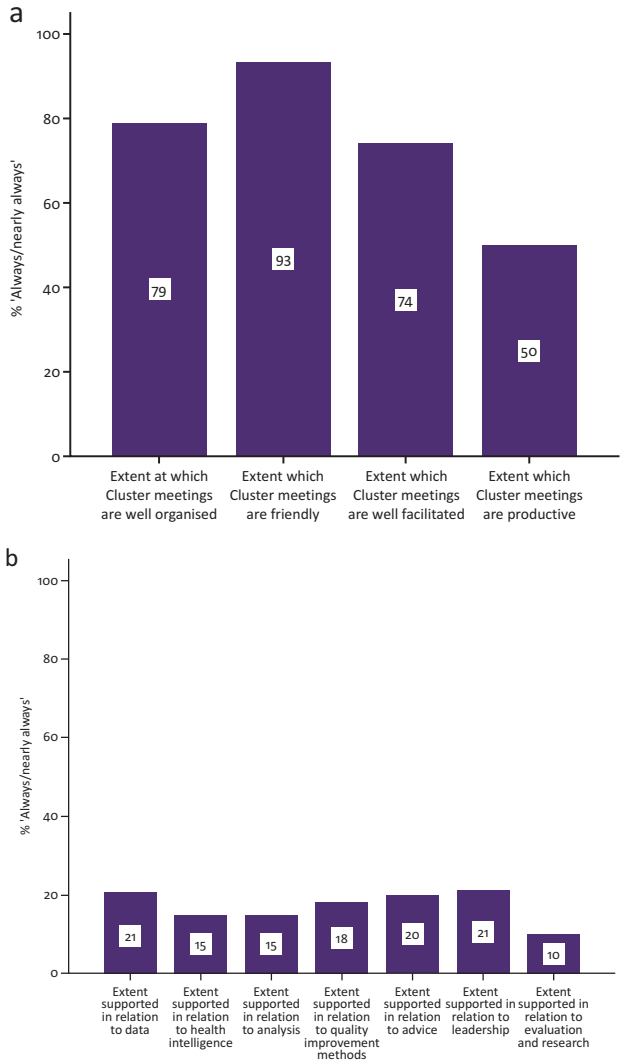

Fig 5. Views on Clusters. Views of GP Cluster quality leads on (a) Cluster meetings and (b) their level of support for Clusters. Reproduced from Mercer *et al.*[14]

I think it would be useful to revisit the joint guidance on Clusters which the Government, BMA, RCGP signed up to….. I don't think anything has particularly happened with that in terms of saying, okay, so where are we now, has that been implemented? Have all CQLs got a minimum amount of time? Has everyone got data support? Has everyone got admin support? Is everyone having more opportunities to influence in their extrinsic roles? …….There's a real need to revisit that because otherwise what happens is the clusters feel a bit disillusioned and start to burnout, CQLs resign in a system that doesn't support them to do what it is they're intended to do. [Primary Care Stakeholder 02]

However, levels of support for Cluster working was felt to be inadequate (Fig 5b). Interestingly, a comparison of the view of senior stakeholders conducted in 2016 with those reported in 2021 found that all of the barriers reported in 2021 had been predicted in 2016, with the exception of the COVID-19 pandemic.[19]

MDT working

A study of senior stakeholders and CQLs and a recent qualitative study with non-CQL GPs and a range of MDT staff conducted in May–June 2022 found that, although most GPs welcomed the expansion of the MDT, there were many challenges to the effective implementation of integrated MDT working in primary care. Most reported that GP workload had not decreased (and, in many cases, had increased).[20]

It is helpful having all these different MDT staff here. It frees up time to do more of the call-backs, face to face slots, and the admin side. However, we are still swamped. I still feel like the multi-morbid population are not benefiting necessarily from that. It's not as if GPs have now got all this extra time to be able to spend with them. We're still firefighting all the rest that's coming in…….. The workload has gone up quite considerably in terms of patient contact to the practice….There's also the supervision of the new AHPs [Allied Healthcare Professionals] on top of everything we're asked to do…….We're also dealing with a lot more angry patients and that really just saps your motivation and feel-good factor when you're trying your hardest and someone's just shouting at you. [P23 GP, Deep End Practice]

Again, a national evaluation of over 200 new models of care pilot projects supported by the Primary Care Transformation Fund from 2016 to 2018 predicted many of these issues: teams felt unsupported in terms of data availability and evaluation and there was a perceived increase in GP workload because of the need for training and clinical supervision of new members of the multidisciplinary team.[21]

The inverse care law

Workforce

Given that a stated aim of the new GP contract was to reduce health inequalities, it is important to examine whether there is any evidence to suggest a reduction in the inverse care law. Fig 6 shows recent data (2022) on treatable mortality and estimated whole time-equivalent (WTE) GPs in Scotland by deprivation decile, using decile one (least deprived) as the baseline. As expected, there is a steep social gradient in treatable mortality across the deprivation deciles. However, the distribution of GPs does not match this need and, indeed, shows an opposite trend, with more GPs in the most affluent decile.

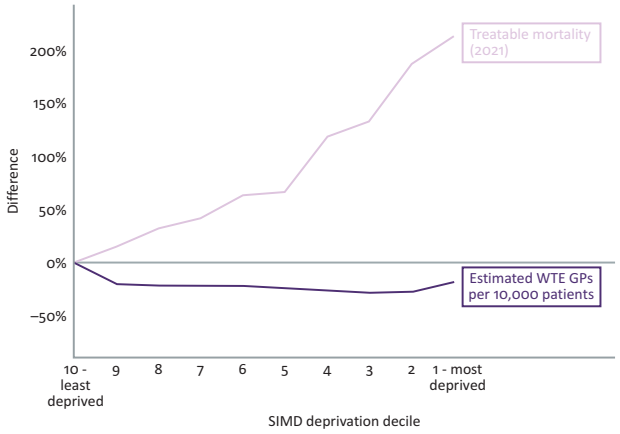

Fig 6. The inverse care law in Scotland. Data from the General Practice Workforce Survey supplied by Public Health Scotland. SIMD = Scottish Index of Multiple Deprivation; WTE = whole-time equivalent.

The accompanying paper in this issue of *Future Healthcare Journal* reports other measures of healthcare need by deprivation, and the absolute numbers of WTE GPs and practice-employed primary care staff, for 2019 and 2022, which shows the same trends as in Fig 6.[22] As discussed in detail the accompanying paper,[22] a caveat in term of the distribution of primary care staff, other than GPs, is that these data do not include the new MDT staff negotiated under the 2018 GMS contract, employed by the HSCPs. There was no national directive to allocate this new workforce on the basis of deprivation, leaving decisions on how workforce would be allocated to a local level. Additionally, data on the extent to which these new staff are distributed by deprivation across Scotland are not available. However, in Glasgow city, where more almost 80% of Scotland's Deep End practices are located, most new MDT staff appear to be providing their services through 'hubs' rather than being based within individual GP practices. Without a specific allocation according to practice deprivation, the new MDT staff deployment is unlikely to help address health inequalities and could in fact worsen the inverse care law.

Link workers

By contrast, link workers have been specifically deployed according to practice deprivation (at least in some Health Boards), with, for example, all Deep End practices in Glasgow being allocated a link worker service. However, the impact of link workers on health inequalities remains unclear.[23] A quasi-experimental cluster randomised controlled trial (RCT) evaluation of the first wave of the Deep End link worker project found no benefit to patient outcomes overall, although subgroup analysis suggested that those who engage with a link worker several times (<50% of the number referred) are more likely to then take up local community resources suggested, and subsequently show improvements in mental health and quality of life.[24] However, link workers will generally only deal with a small caseload of patients compared with GPs and, thus, it is unlikely that the addition of link workers to the primary care teams will significantly reduce GP workload or impact the inverse care law in a meaningful way.[25] Whether the link worker model as it is currently configured and resourced can mitigate health inequalities is also contested.[26]

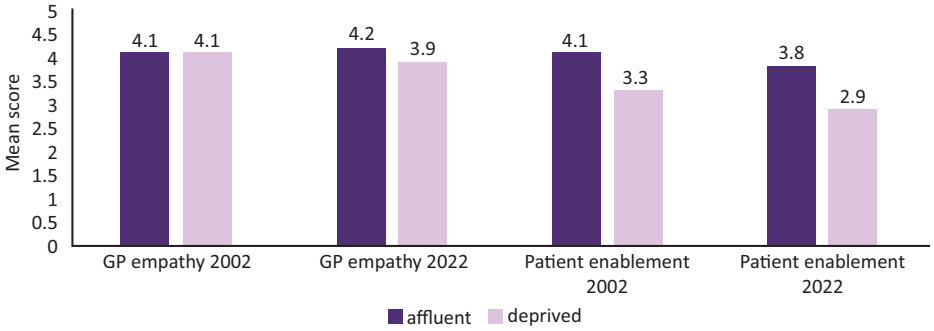

Fig 7. 20-year comparison of GP consultation quality for patients with complex needs in affluent and deprived areas. 2002 data from Mercer *et al* 2007[9]; 2022 data from Stewart Mercer and Kieran Sweeney (unpublished).

GP consultations

A 2022 survey of over 1,000 patients in practices in affluent urban, deprived urban, and remote and rural settings who had consulted a GP in the previous 4 weeks found higher levels of multiple health conditions, more problems to discuss and more complex problems within consultations in deprived urban areas than in either affluent urban or remote and rural areas. It also found lower levels of perceived GP empathy, patient enablement and symptom improvement.[27]

These results are almost identical to a similar survey conducted 20 years ago in 2002–2003, which found similar levels of both need and demand.[9] Fig 7 compares the results of these two studies on consultation quality of patients with complex problems (defined as a combination of mental, physical and social problems) as measured by patients' perception of GP empathy using the Consultation and Relational Empathy (CARE) Measure, and patient enablement, using the patient enablement instrument (PEI). As shown, in 2002, perceived GP empathy was similar in affluent and deprived areas, whereas, in 2022, perceived GP empathy was lower in deprived areas. Patient enablement was lower in deprived areas than in affluent areas in both 2002 and 2022, but was slightly lower overall in 2022 than 2002. These findings give a stark illustration that the inverse care law, and its impact on patient consultation quality, appear not to have changed over the past 20 years, and may even have worsened.

If the inverse care law was reversed would GP consultations improve?

Previous research in Scotland suggests that reversing the inverse care law would be not only effective, but also cost-effective. In the Keppoch Study (in the most deprived practice in Scotland), GPs introduced a system of extended consultation length (up to 20 min) for patients with complex needs.[28] A before and after evaluation found that the longer consultations led to higher levels of patient enablement (Fig 8). The longer consultations were also associated with reductions in GP stress in the consultations. The CARE Plus study[29] was a cluster RCT in which patients in deprived areas with multiple health conditions were given extended consultations (of 30–40 min), resulting in even larger increases in enablement (Fig 8). CARE Plus also showed improvements in wellbeing and quality of life at 12 months, compared with the control group, and the intervention was highly cost-effective.

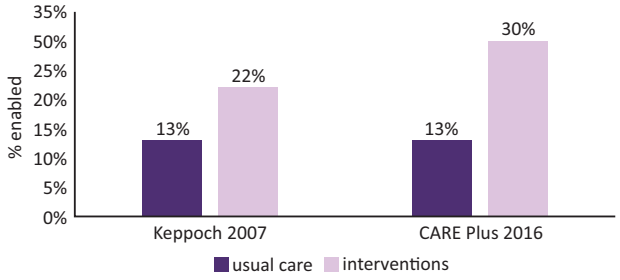

Fig 8. Can patient enablement in general practice consultations in deprived areas be improved? 2007 data from Mercer *et al* 2007[28]; 2016 data from Stewart Mercer (unpublished data from the CARE Plus study[29]). PEI = patient enablement instrument.

Conclusions

Scotland has widening health inequalities and an enduring inverse care law that limits what GPs and patients can achieve in consultations in deprived areas. A stated aim of the new Scottish GP contract is to reduce health inequalities through primary care, but there is no evidence as yet that this is happening. New strategies are required to tackle the inverse care law, including ways of enabling GPs to provide better quality holistic care through targeted longer consultations with patients with the most complex needs. Better informed primary care policy decisions and services are unlikely without the better collection and use of robust and reliable primary care data, which remains a challenge in Scotland; in addition, better workforce planning is essential to the long-term success of the reforms. Ongoing data collection is required to track whether the efforts of GP Clusters are improving care for patients overall, and for patients with multiple health conditions in particular, and whether any such QI is socially patterned. Similarly, the distribution of the MDT by practice deprivation, and its effectiveness in improving patient outcomes need to be established. If, as has been the case to date, healthcare services are not at their best where they are needed most, and are not organised on the basis of 'universal proportionalism', then the NHS might inadvertently function to widen rather than narrow health inequalities in Scotland. ■

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