

GP practice productivity, efficiency, & continuity of care

Produced for the
Midlands Decision Support Network
by The Strategy Unit

February 2024

Prepared by:

Steven Wyatt
Head of Research & Policy
swyatt@nhs.net

Document control

Document Title	GP practice productivity, efficiency, & continuity of care
Prepared by	Steven Wyatt
Checked by	Peter Spilsbury & Clare Humble
Date	February 2024

Executive Summary

Introduction

In the previous two reports in this series, we showed that crude GP practice consultation¹ rates, the average number of consultations per person per year, has been falling since 2012, whilst the need for consultations has been increasing.ⁱ A substantial gap between need and supply has opened up, with significant consequences for patients and the wider health system.ⁱⁱ Almost half of patients now report difficulty getting through to their GP practice by telephone. Attendances at over-stretched emergency departments for conditions treatable in GP practices have increased. And there has been a rise in the number of emergency admissions to hospitals for ambulatory care sensitive conditions².

The scale of the gap between need and supply is such that substantial GP recruitment must be the mainstay of any solution. But large-scale, national efforts to increase the numbers of clinical staff take time, and despite considerable efforts, the number of fully qualified, permanent GPs, the core of the primary care workforce, has fallen since 2015.ⁱⁱⁱ

Resolving this recruitment problem remains a key feature of national strategies for primary medical services.^{iv} But given the pressing consequences of an under-supply of GP practice consultations and the intractability of the GP recruitment challenge, efforts to close the gap between need and supply have increasingly focused on productivity solutions.

In this report, we explore the issue of GP practice productivity and efficiency; how it might be measured, how it has changed over time, the degree of geographic variation, and the relationship between productivity, efficiency, and continuity of care for patients. We draw heavily on three pieces of research carried out recently by the University of York, by the Strategy Unit in conjunction with the University of Birmingham and by the University of Cambridge and the INSEAD business school.

¹ We define this as any interaction, whether in-person or remote, between a patient and a healthcare professional.

² Ambulatory care sensitive conditions are acute or chronic health issues that lead to potentially preventable hospital admissions when not treated in a primary care or community setting.

Key Findings

Analysis by the University of York suggests that cost-weighted productivity of primary medical services increased rapidly, by 2.3% per annum between 2004 and 2012. Since 2012 productivity growth has stalled.

A cross-sectional analysis of GP practice productivity in 2019 and 2020, carried out by the Strategy Unit, suggests that there is little headroom for productivity growth within the service model that was prevalent at the time.

The benefits of care continuity to patients, staff and health systems have been widely reported. But recent research by the University of Cambridge finds a positive relationship between continuity of care and the efficiency of a GP practice consultation. The time to a patient's next appointment is increased if they are seen by their usual GP.

As efforts to increase the number of GPs have faltered, attention has turned to reducing the gap between need and supply of GP practice consultations by improving input-output productivity. These efforts take many forms including division of labour and the delegation of duties to nurses and other healthcare professionals, remote consultations, extended hours, the diversion of low acuity cases to pharmacies, and the merging and federating of GP practices.

These efforts to improve input-output productivity may be undermined by the absence of financial incentives to increase supply. They may also lead to unintended reductions in continuity of care which increases need and reduces supply.

An alternative approach to closing the gap between need and supply of GP practice consultations would make continuity of care the primary objective. A strategy based on this priority would be a radical departure from current policy.

Implications for Midlands Integrated Care Boards

Whilst the gap between need and supply of GP practice consultations varies across ICBs in the Midlands, the direction of travel is consistent. The gap has increased substantially in all Midlands ICBs. Efforts to address these gaps are focused on improving input-output productivity. These efforts do not appear to be bearing fruit. Analysis suggests that opportunities to improve input-output productivity are limited. All ICB subregions achieved a comparative productivity score above 85% in the 9 months prior to the pandemic, with some, including Coventry and Warwickshire, South-East Staffordshire and Seisdon Peninsula, West Leicestershire, Leicester City, and Herefordshire and Worcestershire, operating close to the production frontier.

Efforts to improve input-output productivity appear to be leading to a reduction in continuity of care. Patient reported care continuity has fallen dramatically in all Midlands ICBs since 2012. In Lincolnshire, Leicester, Leicestershire and Rutland, Birmingham and Solihull, and Northamptonshire ICBs, only 30% of patients reported that they usually saw their preferred GP in 2023. But even the ICB with the highest level of care continuity in 2023 (Coventry & Warwickshire) was outperformed by some distance, by the ICB with the lowest level in 2012 (Northamptonshire).

Recent research suggests that reversing these trends in care continuity may lead to reductions in demand, closing the need-supply gap. It might also make the problem of GP recruitment and retention more tractable.

In this report we highlight changes over 10 dimensions of GP practice management and delivery that might lead to improvements in care continuity. Changes in national policy, regulation, and contracting arrangements would undoubtedly assist. ICBs might wish to use their position to promote these national developments.

It may also be possible for ICBs to act independently to create a local environment more conducive to care continuity. Setting expectations for improvements in care continuity without a credible local strategy that acknowledges tensions with national policy is unlikely to be successful, however. ICBs may wish to work with local stakeholders to identify changes that facilitate greater care continuity, whilst explicitly mitigating the financial and regulatory risks to practices of departing from national policy. A recent evaluation of a Health Foundation funded programme, provides some encouragement to those seeking to improve care continuity in the current context.

Contents

Document control.....	2
Executive Summary.....	3
Introduction.....	3
Key Findings.....	4
Implications for Midlands Integrated Care Boards	4
1. Measuring GP practice productivity.....	7
2. Trends in GP practice expenditure and resources levels.	9
3. Trends in GP Practice productivity	11
4. Variation in GP practice productivity	13
5. Efficiency and continuity of care.....	19
6. Trends and geographic variation in continuity of care	21
National trends.....	21
Trends in Midlands ICBs	22
7. Why have levels of continuity of care fallen?	23
8. Efforts to tackle the need-supply gap by improving productivity.....	26
9. Continuity of care as the north star.....	29
10. Discussion.....	31
Appendices	33
Methods and data sources.....	33
Acknowledgements	33
Suggested citation	33
References	34

1. Measuring GP practice productivity

At its simplest, productivity can be thought of as the ratio of a system's inputs to its outputs. If a system can produce more output given its inputs, or produce its outputs with less inputs, then it has increased its productivity. For GP services, its inputs might be thought of as its workforce, premises and equipment, but might also include less tangible quantities such as the health literacy of its patients. Outputs can also be defined in many ways. At one level, outputs can be thought of as the activities that GP practices carry out, such as consultations with patients, prescriptions issued, referrals made to secondary care, but might also include indirect patient care tasks: liaising with secondary care providers or child protection services for example. Some outputs are closely related. Prescriptions and referrals often follow from a consultation and rarely occur in isolation. A further set of processes or qualities might be thought of as mediators, influencing the rate at which inputs are converted to outputs.

Figure 1: Inputs, outputs and mediators

Inputs	Staff hours Premises Equipment (e.g. IT and telephony systems) Patient health literacy
Outputs	Consultations Triage Prescriptions Referrals Indirect patient care Non-clinical tasks
Processes and mediating factors	Operational processes Team cohesiveness and trust The use of IT

Each form of input and output are measured in different ways, and so estimates of productivity must either treat these as distinct variables or find ways to aggregate them. Aggregation requires value judgement. How much is a telephone consultation worth

relative to a face-to-face consultation. Moreover, are all face-to-face consultations of equal value, or should they be weighted to take account of the complexity of the case?

Efficiency is a closely aligned concept.³ Whilst productivity tends to focus on the quantity of outputs delivered, efficiency is more concerned with the effective use of resources. An efficient GP practice targets its resources on the activities of greatest value and seeks to minimise waste. The gap between the measurement of input/output productivity and efficiency is often bridged by adjusting outputs based on their quality or utility.

Over the next few sections, we describe some recent research into GP practice productivity and efficiency, illustrating the results of these analyses and the implications of the measurement methods employed.

³ The terms productivity and efficiency are often used interchangeably. We draw a distinction here for the purposes of this report.

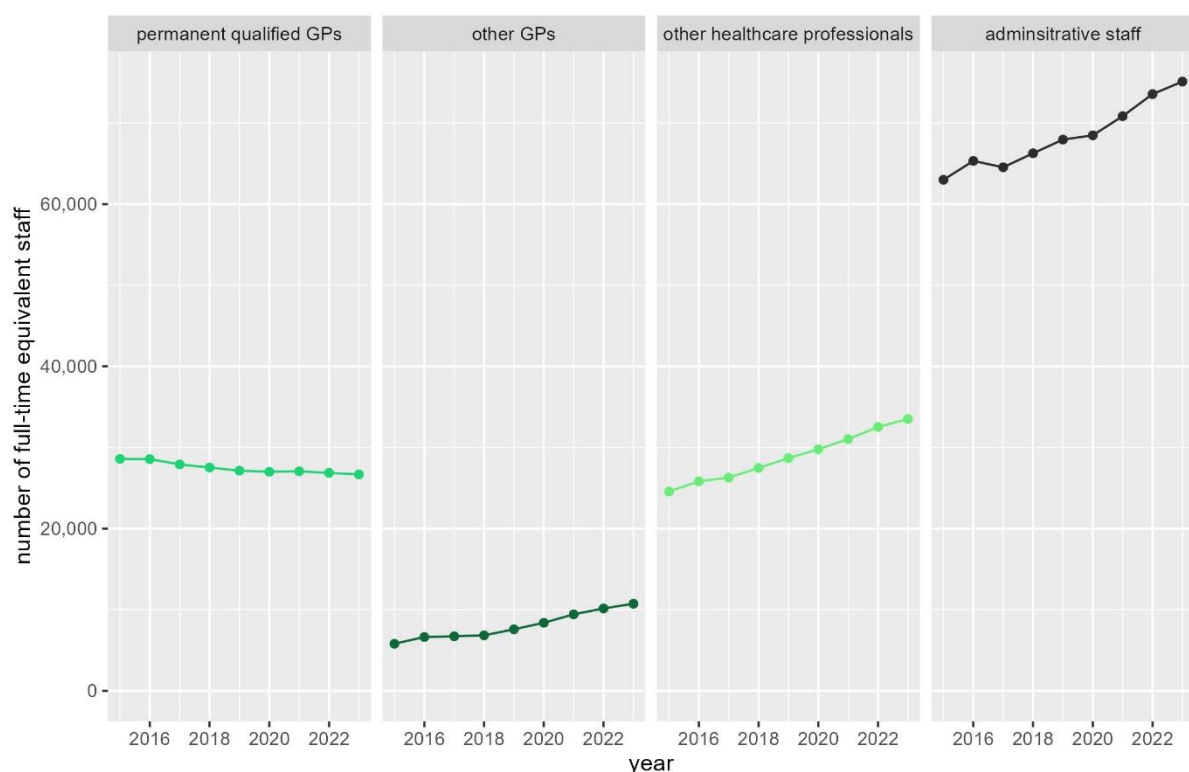
2. Trends in GP practice expenditure and resources levels.

Here we provide some summary data relating to trends in NHS expenditure on GP practices and on the staffing levels in practices.

Data compiled by the Centre for Health Economics suggests that expenditure on primary medical services in England grew by on average, 3.8% per annum, between 2004/05 and 2012/12, from £9.6bn to £13.4bn.^v Expenditure changed little between 2012/13 and 2017/18, growing by only 0.1% per annum. Expenditure then grew rapidly at a rate of 6.4% per annum from 2017/18, reaching £16.2bn in 2020/21. Data recently released by the government indicates that growth in expenditure has slowed since the pandemic and that the proportion of NHS expenditure allocated to primary medical services in 2023/24 was lower than at any point since 2015/16.^{vi}

Establishing long term trends in GP practice staff numbers is not straightforward since data collection systems changed materially on two occasions since 2007. Comparing like-for-like data suggests however, that the number of full-time-equivalent staff was stable between 2004 and 2009, before increasing by 1.6% per annum between 2010 and 2014, and then by 2.2% per annum between 2015 and 2023.

Figure 2: Full-time equivalent staff employed by GP Practices, England, 2015-2023



The mix of staff has also changed. In September 2015, GPs represented 28.2% of the full-time equivalent workforce. This had fallen to 25.6% by September 2023. Of these GPs, a smaller proportion are fully-qualified, permanent members of staff, down from 83.1% in September 2015 to 71.3% in September 2023.

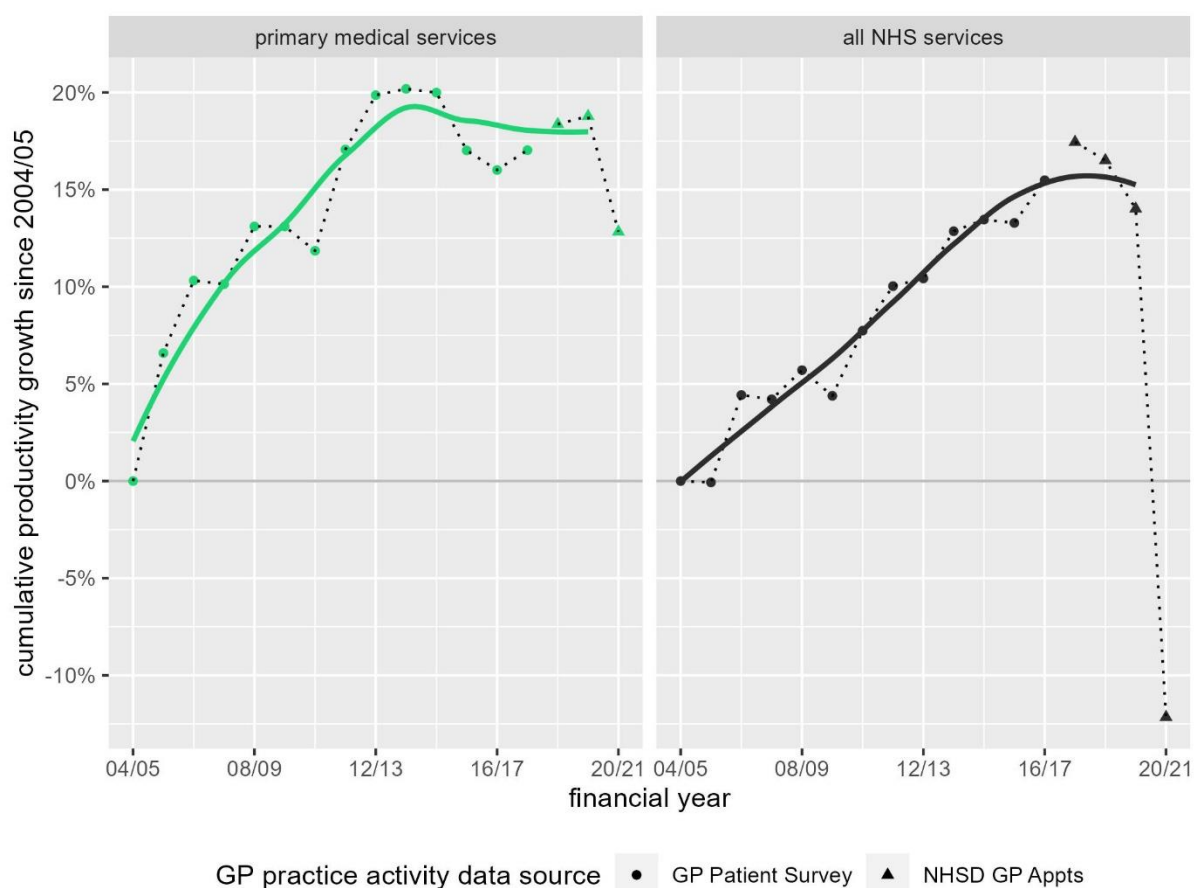
Meanwhile nurses and other staff delivering direct patient care, make up an increasing share of the full-time equivalent workforce, up from 20.1% in September 2015 to 22.9% in 2023. Whilst both nurses and other direct patient care staff are increasing in number, the latter group is growing at a faster rate. In addition to those employed by GP practices, an increasing number of nurses and other health care professionals are employed by Primary Care Networks. NHS Digital report that 578 full-time equivalent nurses and 22,761 full-time equivalent other health care professionals were employed by PCNs in November 2023.^{vii}

The proportion of staff that carry out administrative tasks has not changed substantially since 2015, remaining at between 51% and 52% of the full-time-equivalent workforce.

3. Trends in GP Practice productivity

The Centre for Health Economics (CHE), at the University of York, publish an annual assessment of NHS productivity.^v Figure 3 below summarises changes in the productivity of primary medical services, and all NHS services, each year from 2004/05 to 2020/21. These estimates weight service inputs and outputs according to their costs using an established technique known as the Laspeyres method. Outputs for primary medical services focus solely on consultations, with no quality adjustment.

Figure 3: Cumulative growth in productivity since 2004/05



Source: Centre for Health Economics | Lines are local regressions (loess smooths)

The productivity of GP practices grew rapidly between 2004/05 and 2012/13, at 2.3% per annum on average, outstripping growth of the NHS as a whole. Between 2012/13 and 2019/20 however, GP practice productivity growth stagnated, reducing by 0.1% per annum on average, whilst NHS productivity continued to grow. Productivity reduced

further in 2020/21 as a result of the COVID-19 pandemic, although productivity losses in GP practices (-5.0%) were more modest than in the NHS as a whole (-23.0%).⁴

To put this in context, CHE note that NHS productivity grew at more than twice the rate of the UK economy between 2004 and 2018. But whilst NHS productivity has reduced since 2017/18, the productivity of the whole economy continued to grow until the pandemic.

The same report series includes estimates of GP practice productivity having adjusted for quality. Between 2005/06 and 2018/19, adjustments were made based on the results achieved against the Quality and Outcomes Framework. In 2005/06 and 2006/07 this added 0.5 percentage points to productivity growth, but the effects since then have been negligible. Since 2018/19 GP practice productivity estimates have been calculated adjusting for appointment waiting times. This adjustment served to reduce productivity gains by 0.7 percentage points in 2018/19 and to increase it by 2.0 percentage points in 2019/20.

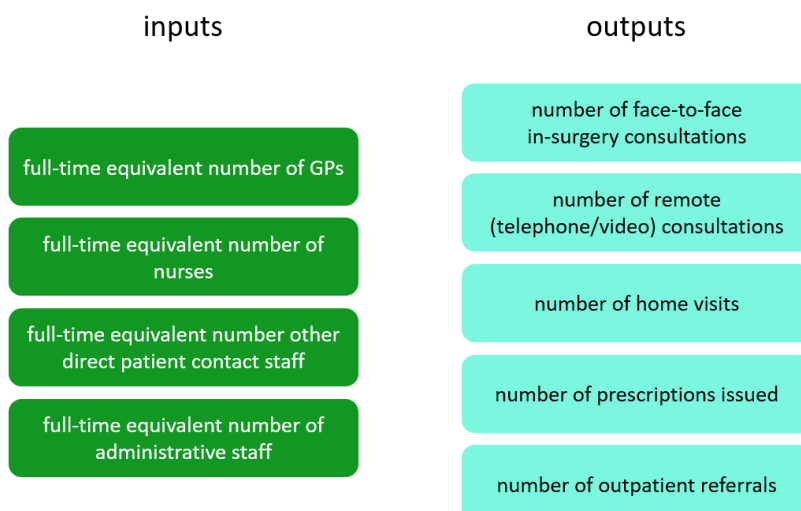
⁴ Note that the inputs costs and outputs of COVID-19 vaccinations are included in the 2020/21 productivity estimates.

4. Variation in GP practice productivity

Why might GP practice productivity gains have stalled since 2012? Is it that there is no headroom for further gains within the current service model? One way to examine this issue is to measure the relative productivity of GP practices at one or more points in time. If there is considerable variation between GP practices in the productivity that they achieve, then this might indicate that there is further potential to increase productivity within existing service models. This question was addressed in a recent analysis published by the Strategy Unit and colleagues at the University of Birmingham.^{viii} The analysis uses a method known as Data Envelopment Analysis (DEA) to compare the inputs available to practices and the outputs that they deliver. One strength of the method is that it can consider multiple forms of input and output simultaneously without the need to aggregate these together using some weighting. This is useful because weighting assumes that different forms of input and output can be substituted for each other. In practice this may not be possible or desirable. It may not be possible for example to reduce expenditure on nursing staff and employ more GPs with the released costs if there are no GPs to employ. Similarly, the relative scale of outputs, say consultations and prescriptions, are likely to be a function of need and clinical practice.

The analysis compared productivity of GP practices grouped together into 107 ICB sub-regions (previously Clinical Commissioning Groups). Grouping was necessary because at the time of analysis, data on the number of consultations delivered, were not published for individual GP practices. This constrained the number of different inputs and outputs that could be considered, since for DEA to be effective, the number of inputs and outputs assessed must be small relative to the number of units compared. The inputs and outputs considered are set out in the figure 4 below.

Figure 4: Inputs and outputs used in the data envelopment analysis



The method works by considering each of the ICB sub-regions in turn and attempts to find other ICB sub-regions that deliver more outputs with the same or fewer of each of the inputs. If ICB subregions can be found with these characteristics, either individually or collectively⁵, then this is regarded as the efficient peer of the ICB sub-region under consideration. The difference in the number of outputs delivered by a sub-region and its efficient peer(s), if they can be found, indicates the scale of the productivity opportunity, and is used to derive a productivity score that runs from 0% to 100%.⁶ If no more productive peer(s) can be found for an ICB sub-region, then it achieves a productive score of 100%. The set of ICB subregions without productive peers make up the productivity frontier. This frontier defines the most productive ways in which inputs are converted to outputs in the period being assessed.

The analysis was carried out over two 9-month time periods: pre-pandemic (April to December 2019) and during the pandemic (April to December 2020). Table 1 shows the volume of inputs and outputs in the two time periods across all ICB sub-regions.⁷ There was a modest increase in all forms of input between the two periods, with the largest proportional increases seen in other direct patient contact staff.

Table 1: Input and output volumes | England | Apr-Dec 2019 & Apr-Dec 2020 excludes data for 6 ICB sub-regions.

Metric type	Metric	Pre-pandemic (Apr-Dec 2019)	During pandemic (Apr-Dec 2020)	% change
Input	GPs FTE	32.7k	33.2k	+1.5%
	Nurses FTE	16.1k	16.3k	+1.3%
	Other direct patient contact staff FTE	12.2k	13.3k	+9.1%
	Administrative staff FTE	65.8k	66.8k	+1.5%
Output	Consultations (in surgery)	195.0m	110m	-43.6%
	Consultations (remote)	33.8m	87.9m	+160.2%
	Home visits	2.32m	1.25m	-46.1%
	Referrals	9.44m	5.82m	-38.4%
	Prescriptions	83.4m	80.3m	-3.7%

⁵ Any linear combination of ICB sub-regions.

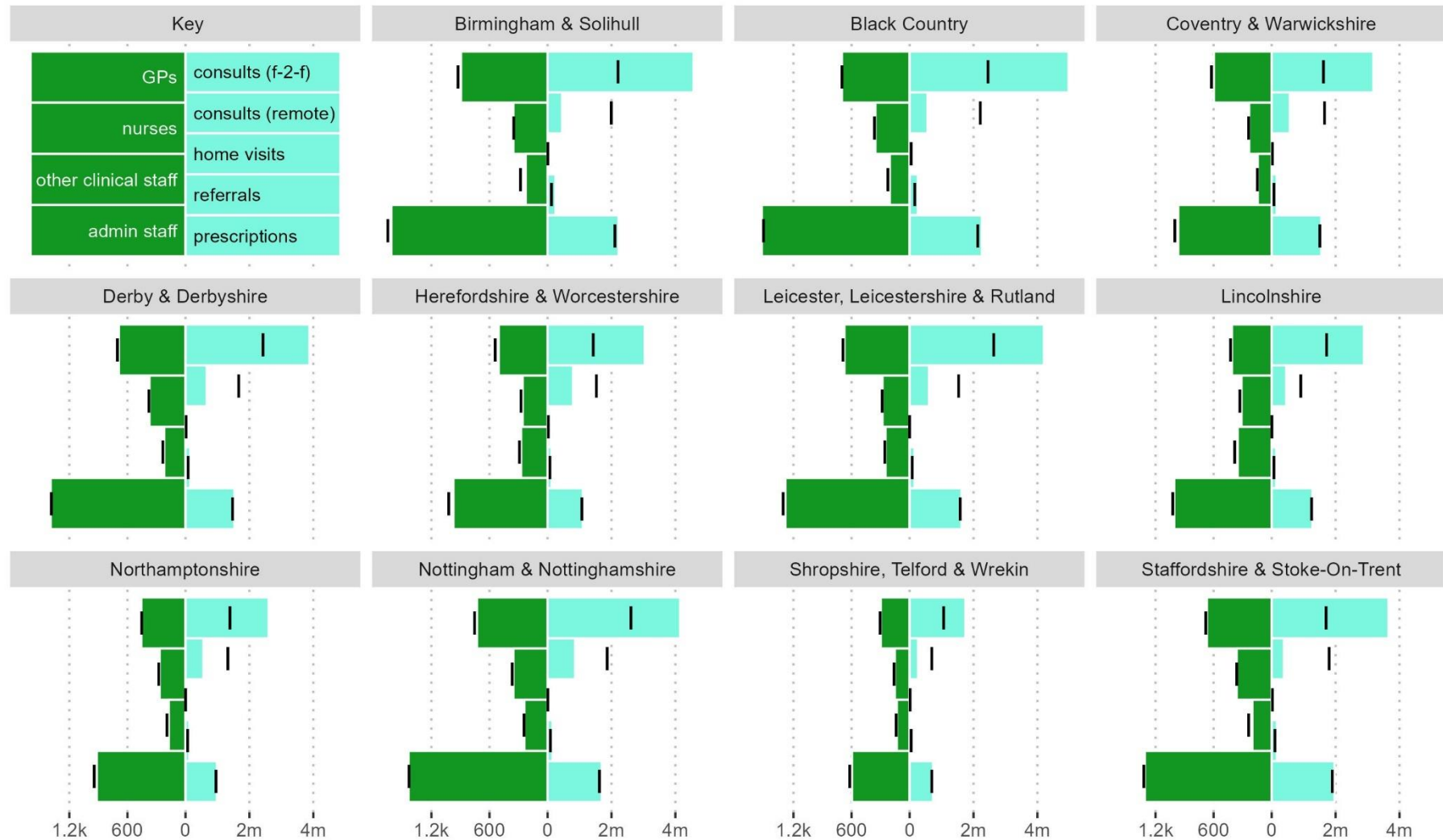
⁶ In DEA methodology, these are usually referred to as "efficiency scores". We use the term "productivity scores" to avoid confusion.

⁷ 6 of 107 ICB-sub-regions were excluded for reasons of data quality or data completeness.

Changes in the outputs were substantial. Face-to-face, in-surgery consultations, home visits and referrals all dropped by about 40%. Remote consultations increased by 160%, although this increase did not fully offset the reduction in face-to-face consultations. The number of prescriptions issued reduced marginally.

Figure 5 shows the number of inputs and outputs for each of the 11 ICBs in the Midlands region. The coloured bars indicate the level of inputs and outputs pre-pandemic, whilst the solid vertical black line indicates levels during the pandemic. Pre-pandemic inputs are shown in green and pre-pandemic outputs in blue. National changes in inputs and outputs and broadly mirrored in each ICB.

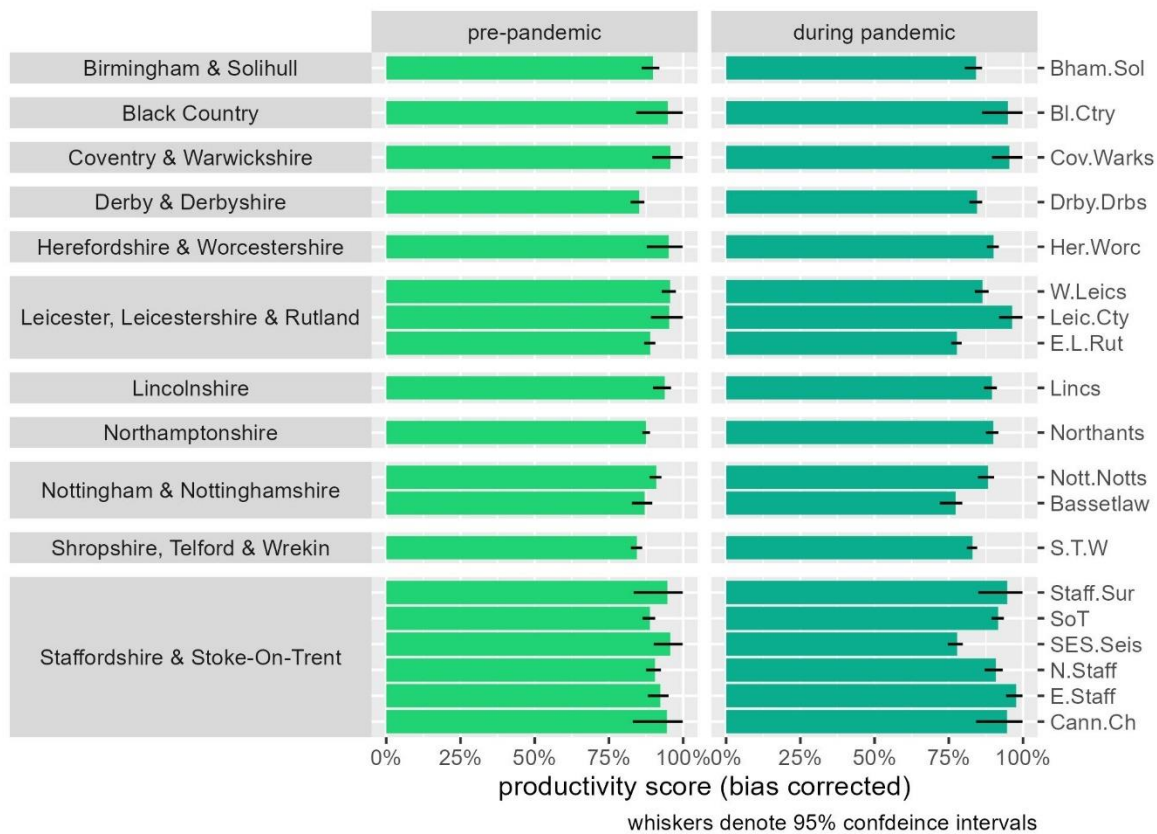
Figure 5: Inputs (left) & outputs (right) | Midlands Integrated Care Boards | Apr-Dec 2019 (bar) & Apr-Dec 2020 (vertical black line)



coloured bar = pre-pandemic (Apr-Dec 2019), vertical line = during pandemic (Apr-Dec 2020), staff numbers are FTEs

The average productivity score across all included ICB sub-regions in England, was 92.9% in the pre-pandemic period, falling to 90.6% during the pandemic. Figure 6 below, shows the productivity scores for each ICB sub-region over the two time periods.

Figure 6: Productivity Score | Midlands ICB sub-regions | Apr-Dec 2019 & Apr-Dec 2020



Comparatively high productivity scores in the pre-pandemic period indicates limited opportunity to increase supply via productivity improvements within the service models prevalent at the time. Variation in productivity scores was somewhat larger during the pandemic. This may indicate productivity losses as GP practices hastily sought to transform their processes in light of infection risks, social distancing guidance, and changes in patient behaviour. The ubiquitous and rapid adoption of remote consultations created two almost entirely exclusive productivity frontiers, before and during the pandemic.

The grouping of GP practices to ICB subregions for this analysis is an important limitation to consider. Grouping practices is highly likely to have obscured greater variation between GP practices within an ICB subregion. It also constrained the number of inputs and outputs that could be assessed. A more comprehensive and granular analysis could be conducted now that NHS Digital has begun to publish appointments data for each GP practice. This analysis could embrace other important inputs (e.g., premises), differentiate between outputs (e.g., urgent and planned appointments), acknowledge differences in

the context within which practices operate (e.g., practice list size, area deprivation etc), as well as incorporating measures of GP practice quality and outcomes. An updated and refined analysis would also allow for an assessment of the impact of changes in service models that have taken place since the pandemic.

5. Efficiency and continuity of care

The third perspective we consider focuses on the relationship between efficiency⁸ in GP practices and continuity of care, drawing on a working paper published earlier this year by researchers at the University of Cambridge and the INSEAD business school.^{ix}

Continuity of care is an important concept in the field of healthcare quality and is particularly prominent in discussions about the quality of primary medical services. Different forms of care continuity have been defined, but we focus here on relational continuity; the extent to which a patient receives care and treatment from the same practitioner over an extended period of time. Earlier research has indicated that relational continuity of care carries considerable benefits to GP practice patients in the form of service experience and outcomes, and to the health system, in terms of treatment adherence and reducing avoidable use of secondary care in an emergency.^{x xi xii xiii xiv}

Continuity of care can be measured from two data sources.^{xv} Several indices have been developed to measure care continuity from data held in clinical information systems. Alternatively, assessments of care continuity can be based on patient responses to carefully formulated survey questions. Previous research has indicated that these two approaches yield strongly correlated results.^{xvi}

The recently published working paper explores the relationship between care continuity and GP practice efficiency in England over the period from 2007 to 2017. Rather than focusing on GP practice efficiency as a whole however, this paper considers the impact on the efficiency of a GP practice consultation. In particular the paper asks whether a consultation with the patient's usual GP is more efficient than a consultation with another practitioner. The researchers measure efficiency using two metrics. (1) the duration of the consultation, and (2), the interval before the patient's next consultation. The analysis concludes that consultation durations are not materially affected by who the patient sees, but if the patient sees their usual GP, then the interval to the patient's next consultation is extended by 18%. In summary, a consultation between a patient and their usual GP is more efficient than a consultation with another GP or member of staff because it consumes a similar level of resource, but defers the time to the next consultation. The researchers also found that this effect, was *"more pronounced for patients with comorbidities, for older patients, and for patients with mental health conditions."*

The researchers set out several plausible mechanisms that might lead to reduced revisit intervals. A patient's usual GP will be more familiar with their health status, trajectory, preferences, behaviours and circumstances, providing a more complete and rounded

⁸ The authors use the term "productivity". We use the term "efficiency" for consistency.

context within which diagnoses and treatment options can be considered. A patient's usual GP may have a stronger and more trusting relationship with the patient, improving the quality of communication, increasing the likelihood of treatment adherence, and reducing the need for defensive medicine. The patient's usual GP is the clinician that is likely to see the benefit of a reduced revisit interval and so has a greater incentive to strive for it, by getting the diagnosis and treatment plan right first time and by dealing with secondary issues within the consultation.

What might be the impact of improving continuity of care on the number of consultations that need to be delivered? One way to consider this question is via a thought experiment. Let's imagine two practices that are identical in all ways except that one delivers *no* continuity of care and the other delivers *complete* continuity of care. If the two practices had the freedom to increase resource levels to meet need, then this study suggests that the second practice would need to deliver 18% fewer consultations than the first. The authors of the paper offer a set of estimates based on more realistic scenarios. Two changes are considered. (1) Redistributing consultations over the practice workforce to deliver higher levels of continuity to those who might benefit most. And (2) increasing the levels of continuity offered by practices with lower reported levels, to the GP practice median, upper quartile, and upper decile level of continuity. These scenarios and the estimated impact on demand are shown in table 2 below.

Table 2: Estimated impact of targeting and increasing care continuity on demand for consultations

Scenario	Targeting continuity at those who might benefit most?	Increasing minimum practice continuity	Reduction in demand
1	yes	none	2.7%
2	yes	to GP practice median	3.4%
3	yes	to GP practice upper quartile	4.3%
4	yes	to GP practice upper decile	5.2%

Data drawn from Kajaria-Montag (2023)

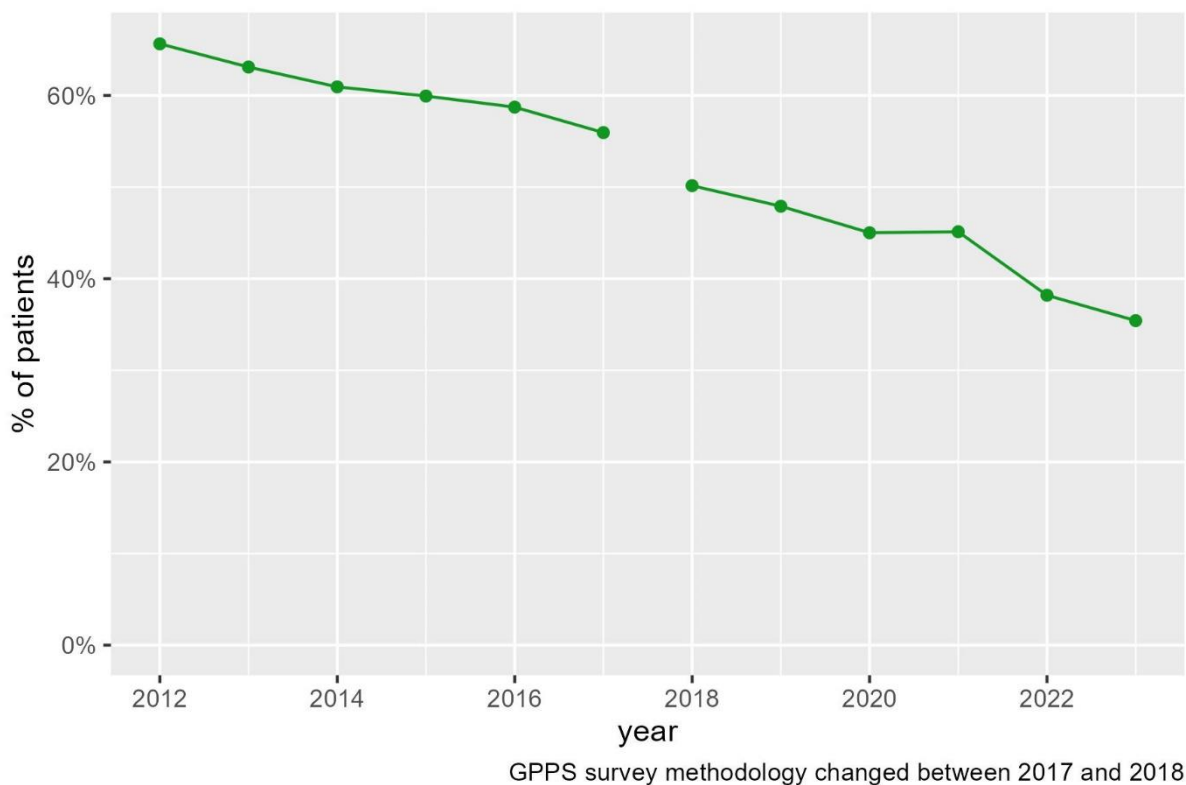
It is worth noting that this study is based on practice data for the period from 2007 to 2017. Continuity of care has reduced considerably since this period. Reversing these trends would therefore lead to reductions in demand from today's base, over and above those described above. Given however, the present system is operating under considerable pressure with high levels of unmet need and displaced demand, it is likely that capacity freed up through care continuity and reduced revisit intervals will be immediately consumed by other patients in need.

6. Trends and geographic variation in continuity of care

National trends

In 2012, almost two thirds (65.6%) of patients surveyed, reported that they usually⁹ saw their preferred GP.^{xvii} By 2023 that proportion had reduced to approximately one third (35.4%). Reductions were seen across patient subgroups, including older people and patients with a disability or a long-term condition.

*Figure 7: Patients reporting that they always or usually see or speak to their preferred GP
England | 2012-2023*



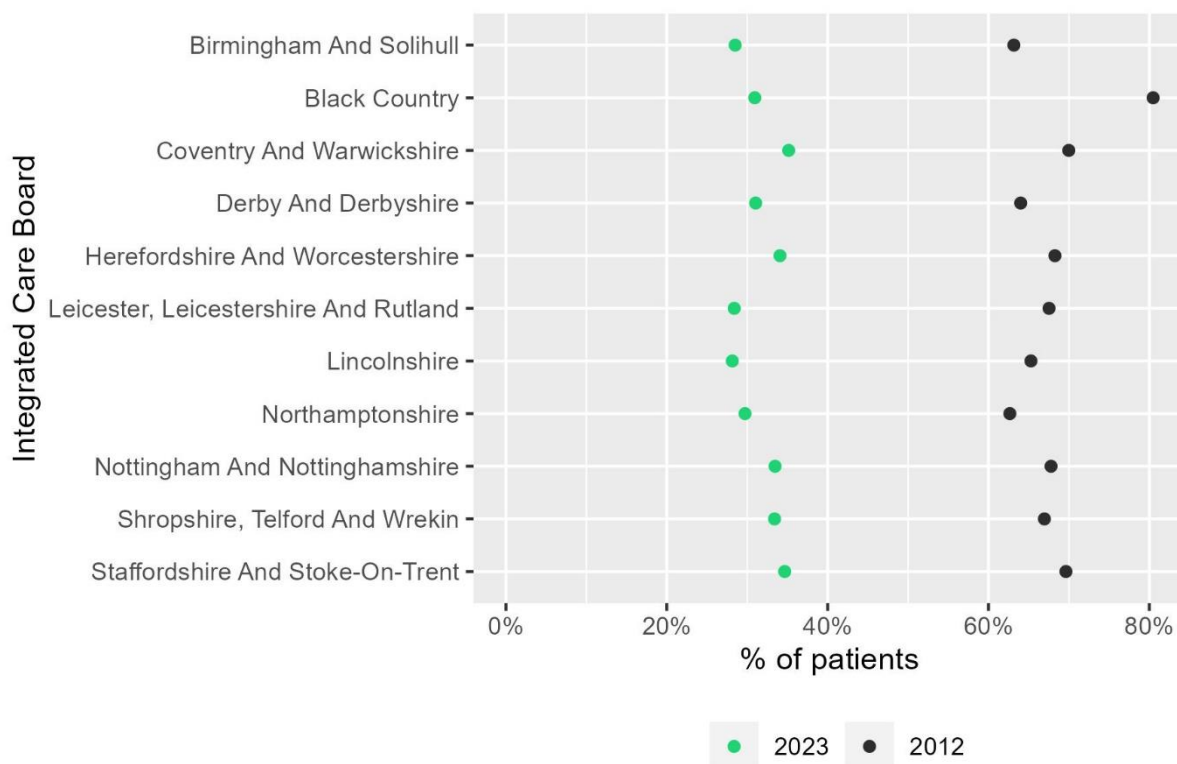
A 2019 study found that continuity of care had fallen for all groups, but that the reduction was most pronounced for older patients and those with complex medical needs.^{xviii}

⁹ always, almost always or a lot of the time.

Trends in Midlands ICBs

Reductions of a similar scale to those observed nationally, were seen in each of the 11 Integrated Care Boards in the Midlands. The ICB with the lowest level of patient reported care-continuity in 2012 (Northamptonshire), outperformed the ICB with the highest level in 2023 (Coventry & Warwickshire) by some distance.

Figure 8: Patients reporting that they always or usually see or speak to their preferred GP
Midlands ICBs | 2012-2023



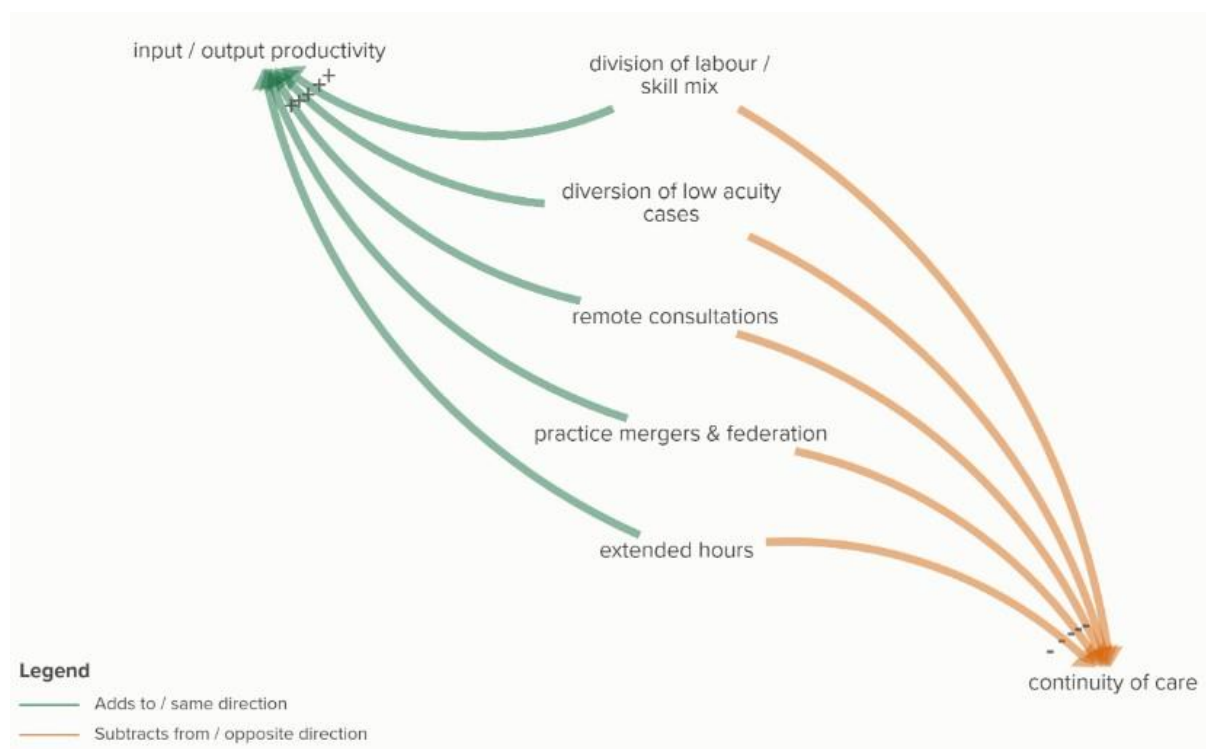
Whilst at first glance, these effects appear to be ubiquitous, it is worth noting that a small number of practices have bucked this trend, preserving high levels of patient-reported continuity year on year since 2012.¹⁰ A positive deviance study might shed light on the mechanisms or conditions that have enabled these practices to maintain high levels of care continuity.

¹⁰ In 54 practices, more than 75% of patients reported that they always or usually speak with their preferred GP in each year from 2012 to 2023.

7. Why have levels of continuity of care fallen?

Deterioration in continuity of care can be seen as an unintended consequence of efforts to increase input-output productivity. We highlight five such effects. (1) There has been an increase in the employment of non-medical clinicians in general practice. This has been used to compensate for the lack of growth in permanent, fully qualified GPs, but has also secured productivity improvements by ensuring that tasks that do not require medical expertise are carried out by lower cost staff. This division of labour means that tasks relating to a single patient are now distributed over a clinical team, resulting in reduced continuity. (2) The increased use of community pharmacies to manage some elements of patient needs that would otherwise have been handled by a GP, has a similar disaggregating effect. (3) Face-to-face consultations remain the dominant type of patient contact, but telephone and video calls and online messaging systems are being used with increasing frequency.

Figure 9: The impact of productivity measures on care continuity



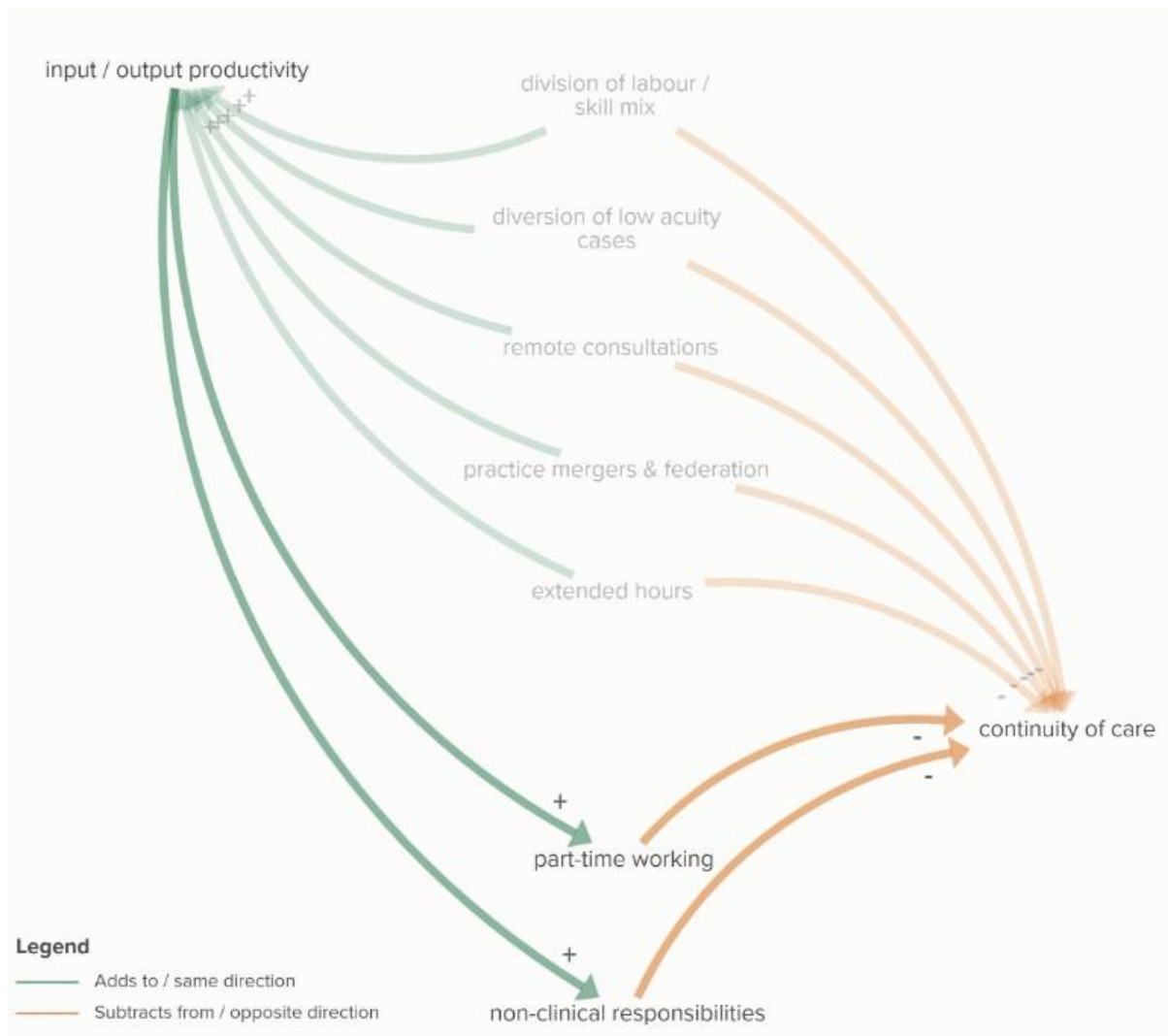
These consultation modes may be quicker and incur lower costs, but provide a less conducive environment for the patient and practitioner to develop a trusted relationship, a key conduit through which the benefits of continuity of care can flow.^{11 xix}

(4) Mergers between practices are common and as a result the number of GP practices have reduced from approximately 8 thousand in 2012 to 6.5 thousand in 2022. Two studies reported a negative correlation between practice size and care continuity.^{xvi,xx} Practices have also been formed into 1250 Primary Care Networks to provide mutual support. Merging and federating in this way allows more flexible use of the staffing resource, and greater rates of staff utilisation, but is likely to lead to an increase in the number of staff members who interact with a patient, and therefore to reduce care continuity. (5) Opening times of GP practices have expanded whilst an individual staff member's working hours have not. This increasing discrepancy means that a preferred GP is less likely to be available to a patient calling during opening hours.

There are other effects that may have served to reduce care continuity. (A) A larger number of permanent, fully qualified GPs now work on a part-time basis.^{xxi} The ratio of full-time-equivalent staff to headcount has reduced from 0.82 in September 2015 to 0.75 in October 2023. Part-time GPs are available for a shorter proportion of the week to those patients who would prefer to see them. The increased prevalence of part-time working is commonly attributed to a changes in the sex mix of the GP workforce. Whilst it is true that part-time working is more prevalent amongst women GPs, analysis of NHS Digital GP Workforce data suggests that this explains only a small proportion of the increase in part-time working. Since 2015, both male and female GPs are increasingly likely to work on a part-time basis. One explanation for this change is an increase in work pressures and a reduction in job satisfaction. Evidence for these effects can be found in the biennial GP WorkLife Survey.^{xxii} (B) Since 2011, GPs have played an increasing role in the management of the local health system: overseeing clinical commissioning and local integrated care teams. This role removes them from clinical practice and reduces their availability to patients. Whilst these two factors (A and B) do not flow directly from efforts to increase input-output productivity, they might be seen as the consequence of these efforts. As the input-output productivity increases and care continuity reduce, the working environment for GPs may become less enjoyable, rewarding, and tolerable, and this in turn might lead some GPs to reduce their hours or seek non-clinical responsibilities.

¹¹ We note that a recent study found that increases in the use of remote consultations did not adversely affect care continuity over the period from April 2018 and April 2021. To be clear, we suggest here that remote consultations may undermine one of the mechanisms by which care continuity leads to improved outcomes, rather than the metric itself. i.e. that remote consultations degrade care continuity, rather than reduce it.

Figure 10: The impact of productivity measures on care continuity (indirect effects)

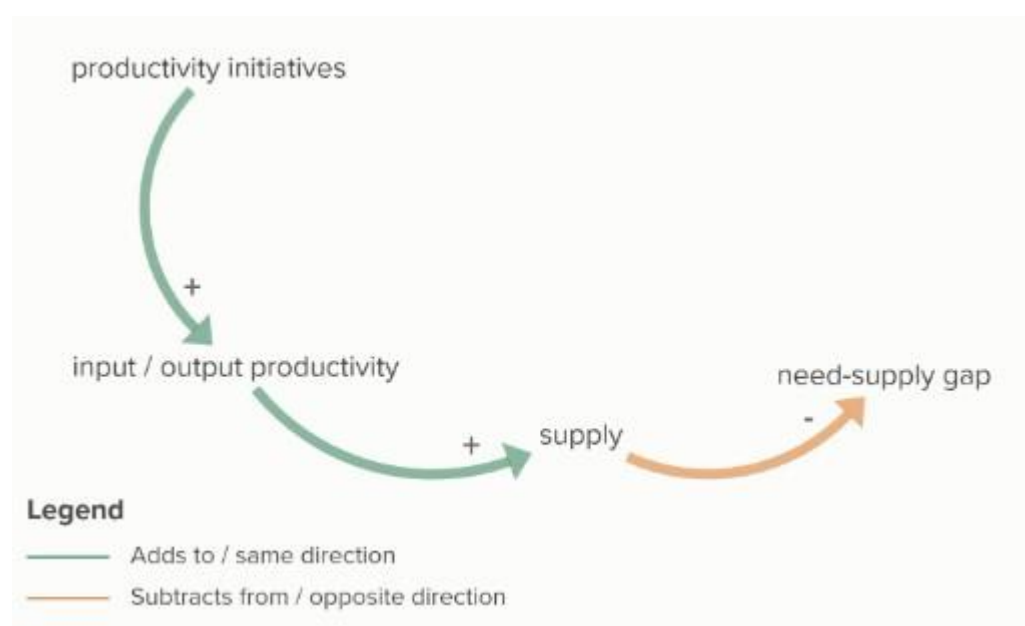


8. Efforts to tackle the need-supply gap by improving productivity

The diagram below sets out the causal theory that sits behind efforts to address the need-supply gap for GP practice consultations by improving input-output productivity. There are three links in the chain that make up this theory. Productivity measures (division of labour, changing skill-mix, the diversion of low acuity cases, remote consultations, practice mergers and federation etc.) improve input / output productivity (1), leading to an increase in supply (2), which in turn leads to a reduction in the need-supply gap (3).

A similar theory has underpinned radical change in inpatient hospital services. Here productivity measures have led to substantial reductions in patients' length of stay, freeing up resources to allow more patients to be admitted without increasing the bed stock. There is, however, a key difference in the context within which this causal theory plays out in hospital and primary medical services.

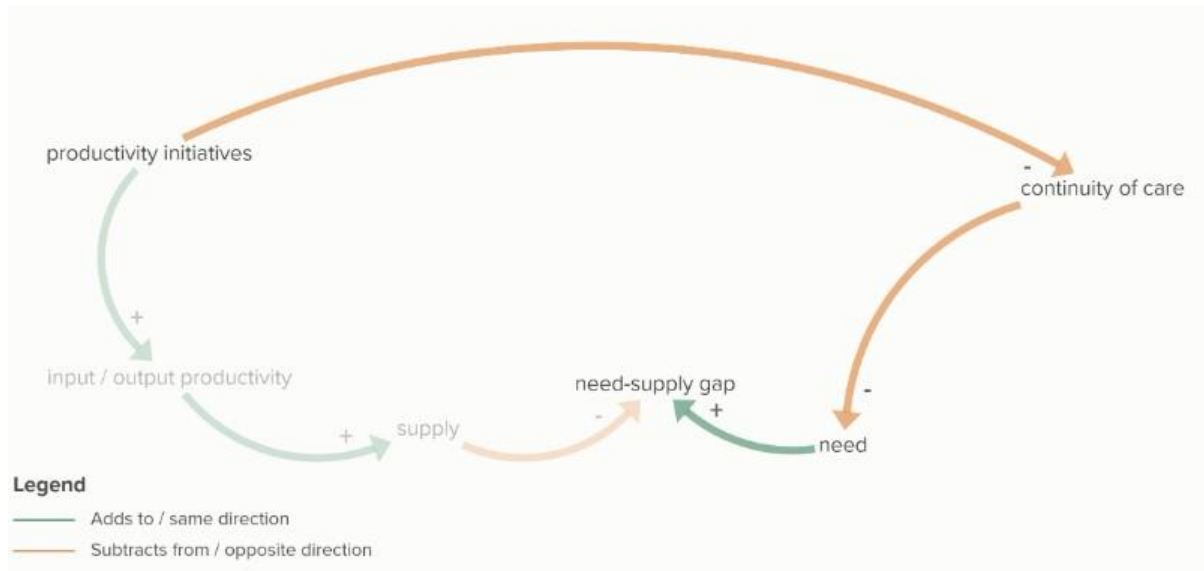
Figure 11: Productivity measures to reduce need-supply gap (causal theory)



Acute hospital payment arrangements (the National tariff, previously known as Payment by Results) provide substantial incentives for providers to increase supply. The absence of analogous incentives for primary medical service contracts, serves to weaken the second link in this causal theory. Put simply, if GP practices secure productivity gains, then there are insufficient incentives to use the freed-up resources to deliver more consultations. Instead, the resources are released to offset cost pressures.

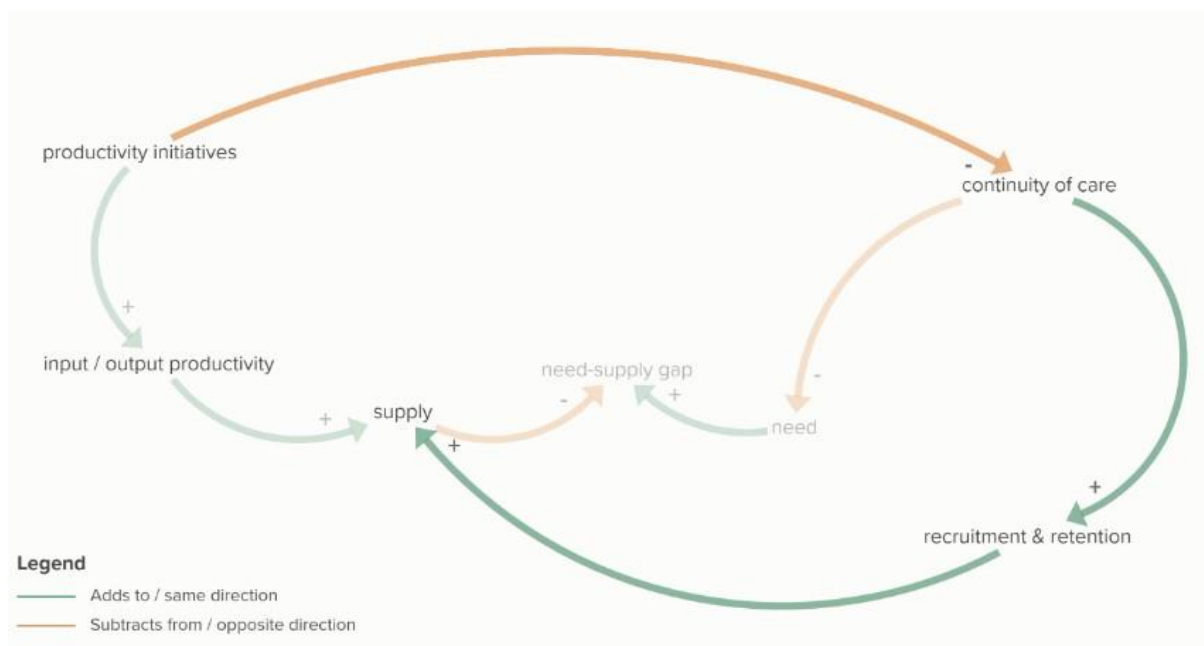
The causal theory is also undermined by two countervailing mechanisms. Firstly, efforts to improve input / output productivity, inadvertently reduce continuity of care, reducing the interval between consultations, thereby increasing the need-supply gap.

Figure 12: Consequences of unintended impact on care continuity



Second, a working environment with high levels of input-output productivity and low levels of continuity of care may not be conducive to recruitment and retention. This in turn reduces supply, by constraining workforce growth.

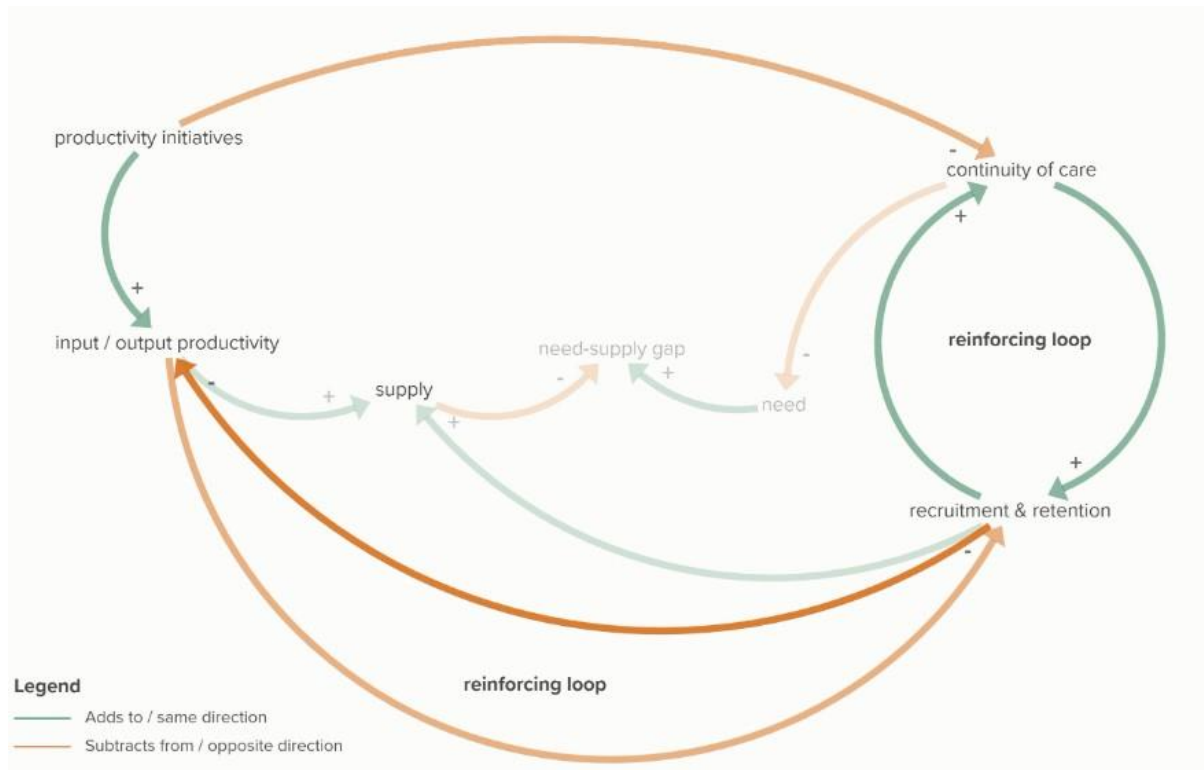
Figure 13: Unintended impact on recruitment and retention and supply



High levels of staff turnover have secondary effects, creating negative feedback loops. When staff turnover is high, input / output productivity is reduced, since new staff require

training and orientation and are not familiar with local working practices. High levels of staff turnover also reduce continuity of care.

Figure 14: Feedback loops



The impact of these feedback loops would be reversed if continuity of care were increased.

9. Continuity of care as the north star

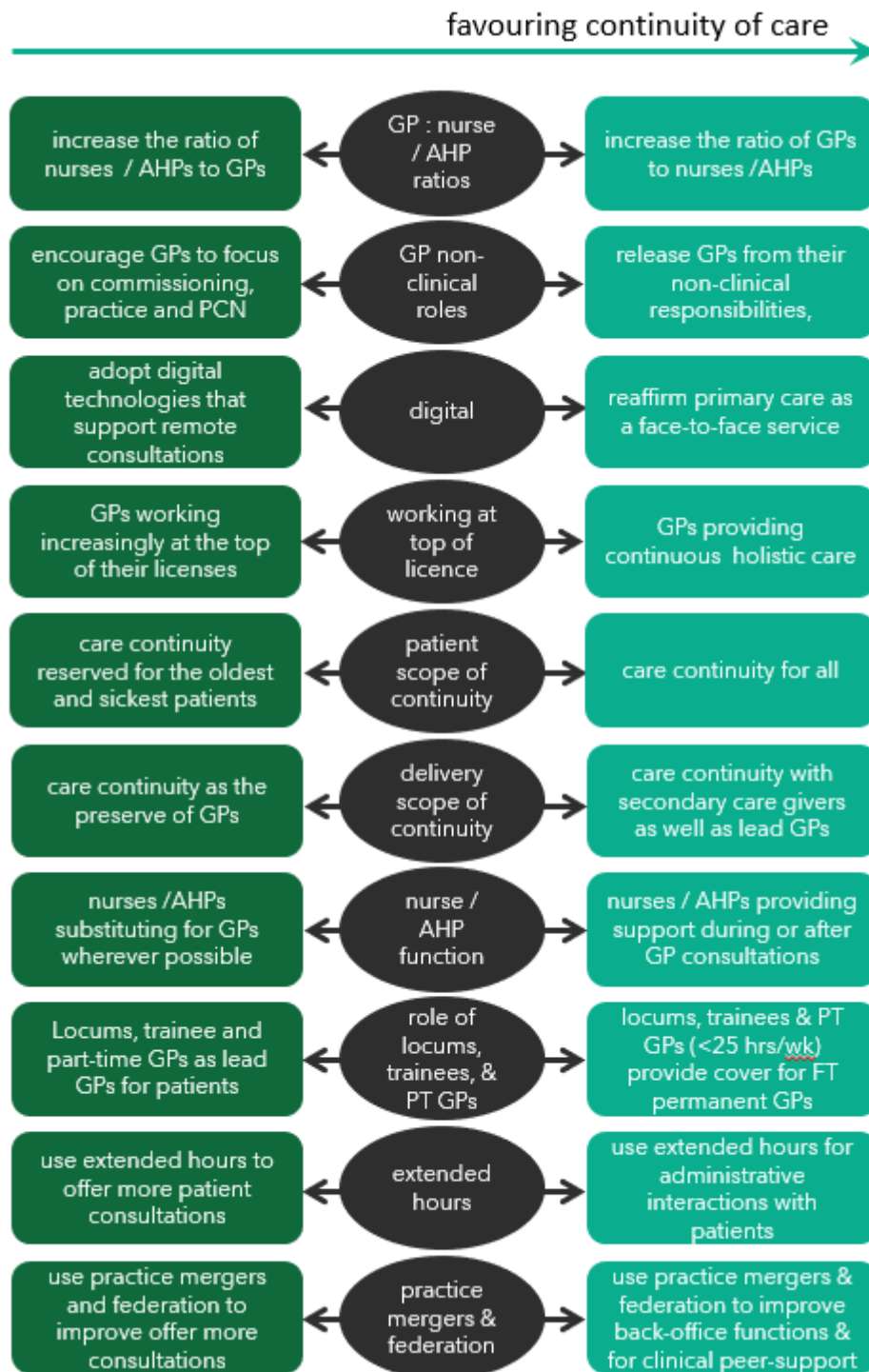
In their paper, the University of Cambridge researchers suggest that rather than pursuing input-output productivity in ways that increasingly preclude continuity of care, we might instead elevate continuity of care to become a primary objective of the service.

Improvements in care continuity would not only deliver efficiency benefits in its own right, but would also reverse some of the negative feedback loops described above, unblocking the long-term challenge of GP recruitment and retention.

What might be the characteristics of a national or ICBs policy that sought to prioritise continuity of care? In figure 15 overleaf, we indicate the direction of travel that might be conducive to continuity of care, over 10 dimensions of GP practice management and delivery.

We note that in many cases, national policy, regulation, and the business imperatives arising from current contractual arrangements do not appear to be well aligned with ambitions to improve care continuity.

Figure 15: Aligning strategy with ambitions to improve continuity of care



10. Discussion

The strategy of closing the gap between need and supply of GP practice consultations by improving input-output productivity does not appear to be working. Analysis by the University of York indicates that there has been no productivity growth in GP practice services since 2012. Furthermore, a cross-sectional analysis suggest there is little headroom for productivity growth within the service model that was prevalent in 2019 and 2020. Meanwhile, the gap between need and supply is increasing. Efforts to improve input-output productivity may have led to a deterioration in continuity of care, reducing revisit intervals, increasing demand, and undermining efforts to recruit and retain staff.

The benefits of continuity of care to patients and health systems have long been recognised and there have been many calls to improve care continuity. Despite this, continuity of care has been in decline for over a decade. This is often characterised as care continuity falling victim to efforts to improve access. But improving continuity of care is not incompatible with improving access. We illustrate in this paper that access only conflicts with care continuity when GP staffing levels are held steady. The real conflict is between care continuity and efforts to improve input-output productivity. The most recent research, highlighting the efficiency benefits of care continuity, reframes this apparently intractable problem. Improving continuity of care can deliver efficiency improvements by increasing revisit intervals, providing headroom for better access at the same time as unblocking the long-term challenge of GP recruitment and retention, by enhancing job satisfaction.

Care continuity has featured heavily in recent debates about the future of GP practices. The new Chair of the BMA England GP Committee has called for care continuity to become a core principle of General Practice.^{xxiii} At the 2023 Local Medical Committee Conference, GPs voted to instruct the BMA's General Practitioners Committee to *"demand a move away from a target based GP contract to one that would reward and prioritise continuity"*.^{xxiv} And a recent report by the Health Services Safety Investigations Body calls upon the Department of Health and Social Care to ensure that *"the GP contract explicitly includes and supports the need for GP practices to deliver continuity of care."*^{xxv}

Three recent studies have explored the impact of programmes to improve care continuity. A 2021 Israeli study explored the impact of a policy change which required patients to see their usual GP unless this GP was not available in the next two days, and the patient determined that their need was urgent.^{xxvi} The study found that the policy change had a limited impact, improving continuity adherence somewhat for older patients and those from higher socio-economic groups. A 2022 Australian study tested whether new enrolment arrangements and practice-level financial incentives might improve care

continuity. The authors concluded that relational continuity was not influenced by the intervention.^{xxvii} Finally, a 2022 study sought to evaluate a Health Foundation funded programme to improve care continuity in 45 practices in England. The programme included a mix of interventions focused on improving staff and patient engagement, adjusting patient allocation processes, improving workflow, and measuring care continuity. The programme ran for two and a half years from January 2019 to July 2021 and was somewhat disrupted by the COVID-19 pandemic. Qualitative research found that participating practices increasingly recognised the importance of care continuity and that 60% of staff regarded care continuity as a strategic priority. Although no formal quantitative evaluation was carried out, the authors note that care continuity improved modestly in the intervention practices, against a backdrop of deterioration nationally.^{xxviii}

If efforts to improve continuity of care are to succeed, then Integrated Care Boards and policy makers must recognise that the recent decline in care continuity is not an accident, nor does it reflect a lack of effort or will on behalf of GPs. Rather, reductions in care continuity have come about as a direct and indirect result of current policies. Put simply, our current policies are inadvertently but perfectly designed to reduce care continuity. Targets, regulation, and financial incentives that penalise poor continuity may seem attractive but will not address this underlying dynamic. Indeed, they may add further pressure to GPs, create perverse incentives and distort recording practices. A strategy that prioritises care continuity should instead seek to address factors that have led to its decline. Meanwhile, any local efforts to improve care continuity must acknowledge the tensions that this will create for GP practices until national policy is changed.

Appendices

Methods and data sources

Information about the methods and data sources used in this analysis is available in an accompanying document.

Acknowledgements

This study is based in part on data from the CPRD database, obtained under license from the UK Medicines and Healthcare products Regulatory Agency (protocol ID 22_002493). The data were provided by patients and collected by the National Health Service as part of their care and support.

Thank you to Professor Tom Marshall, Dr David Shepherd, Peter Spilsbury, Clare Humble, Fraser Battye, and Simon Bourne for commenting on the draft report.

Suggested citation

Wyatt S. *GP practice productivity, efficiency, & continuity of care*. February 2024. The Strategy Unit.

References

- ⁱ Wyatt S, Long-term trends in GP Practice Consultation Rates, The Strategy Unit for the Midlands Decision Support Network, February 2024.
- ⁱⁱ Wyatt S, The gap between need and supply of GP practice consultations, The Strategy Unit for the Midlands Decision Support Network, February 2024.
- ⁱⁱⁱ NHS Digital. General Practice Workforce 31 October 2023. Published November 2023. <https://digital.nhs.uk/data-and-information/publications/statistical/general-and-personal-medical-services/31-october-2023>
- ^{iv} NHS England. Delivery Plan for Recovering Access to Primary Care. May 2023. <https://www.england.nhs.uk/long-read/delivery-plan-for-recovering-access-to-primary-care-2/>
- ^v Arabadzhyan A, Castelli A, Gaughan J, Anaya Montes M, Chalkey M. Productivity of the English National Health Service: 2020/21 update. Centre for Health Economics, University of York. March 2023. [https://www.york.ac.uk/media/che/documents/papers/researchpapers/NHS%20prod%20update%20202021_20230307-combined%20\(1\).pdf](https://www.york.ac.uk/media/che/documents/papers/researchpapers/NHS%20prod%20update%20202021_20230307-combined%20(1).pdf)
- ^{vi} UK Parliament. Response to question from Wes Streeting MP, tabled on 17 November 2023 and answered by Andrew Stephenson MP on 21 December 2023. UIN 2419. <https://questions-statements.parliament.uk/written-questions/detail/2023-11-17/2419>
- ^{vii} NHS Digital. Primary Care Network Workforce, 30 November 2023. 4 Jan 2024. <https://digital.nhs.uk/data-and-information/publications/statistical/primary-care-network-workforce/30-november-2023>
- ^{viii} Williams K, Croft S, Mohammed M, Wyatt S. Estimating productivity levels in primary medical services across clinical commissioning groups in England and the impact of the COVID-19 pandemic: a data envelopment analysis. BMC Health Serv Res 23, 1194 (2023). <https://doi.org/10.1186/s12913-023-10117-2>
- ^{ix} Kajaria-Montag H, Freeman M, Sholtes F. Continuity of Care Increases Physician Productivity in Primary Care. INSEAD Business School Working paper 2023/23/TOM. June 2023. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3868231
- ^x Pereira Gray D, Sidaway-Lee K, White E, Thorne A, Evans P. Continuity of care with doctors—a matter of life and death? A systematic review of continuity of care and mortality. BMJ Open 2018;8:e021161. doi: 10.1136/bmjopen-2017-021161 <https://bmjopen.bmj.com/content/8/6/e021161>
- ^{xi} Baker R, Streatfield J. What type of general practice do patients prefer? Exploration of practice characteristics influencing patient satisfaction. British Journal of General Practice 1995; 45 (401): 654-659. <https://bjgp.org/content/45/401/654>
- ^{xii} Cabana M, Jee S. Does continuity of care improve patient outcomes? Journal of Family Practice. VOL 53, NO 12. December 2004 https://f.hubspotusercontent00.net/hubfs/8011857/Admire_August2020/Pdf/5312JFP_AppliedEvidence2.pdf
- ^{xiii} Chen, C-C; Tseng, C-H, Cheng, S-H. Continuity of Care, Medication Adherence, and Health Care Outcomes Among Patients With Newly Diagnosed Type 2 Diabetes: A Longitudinal Analysis. Medical Care 51(3):p 231-237, March 2013. | DOI: 10.1097/MLR.0b013e31827da5b9 https://journals.lww.com/lww-medicalcare/abstract/2013/03000/continuity_of_care_medication_adherence_and.4.aspx
- ^{xiv} Barker I, Steventon A, Deeny S. Association between continuity of care in general practice and hospital admissions for ambulatory care sensitive conditions: cross sectional study of routinely collected, person level data BMJ 2017; 356 :j84 doi:10.1136/bmj.j84 <https://www.bmj.com/content/356/bmj.j84>
- ^{xv} Fraser C, Clarke G. Measuring continuity of care in general practice. The Health Foundation November 2023. <https://www.health.org.uk/publications/long-reads/measuring-continuity-of-care-in-general-practice>
- ^{xvi} Hull S, Williams C, Schofield P, Boomla K, Ashworth M. Measuring continuity of care in general practice: a comparison of two methods using routinely collected data. British Journal of General Practice 2022; 72 (724): e773-e779. <https://bjgp.org/content/72/724/e773>
- ^{xvii} NHS and Ipsos. GP Patient Survey Analysis Tool. 2023. <https://www.gp-patient.co.uk/analysistool>

- ^{xviii} El Turabi A. Unintended Consequences: Empirical Studies of Continuity of Care and Financial Incentive Gaming in Primary Care. Doctoral dissertation, Harvard University, Graduate School of Arts & Sciences. 2019. <https://dash.harvard.edu/handle/1/41121282>
- ^{xix} Parry W, Fraser C, Crellin E, Hughes J, Vestesson E, Clarke G. Continuity of care and consultation mode in general practice: a cross-sectional and longitudinal study using patient-level and practice-level data from before and during the COVID-19 pandemic in England. *BMJ Open* 2023;13:e075152. doi: 10.1136/bmjopen-2023-075152
<https://bmjopen.bmj.com/content/13/11/e075152>
- ^{xx} te Winkel M, Slottje P, de Kruif A, Lissenberg-White B, van Marum R, Schers H, Uijen A, Bont J, Maarsingh O. General practice and patient characteristics associated with personal continuity: a mixed-methods study. *British Journal of General Practice* 2022; 72 (724): e780-e789.
<https://bjgp.org/content/72/724/e780>
- ^{xxi} NHS Digital. General Practice Workforce 31 October 2023. Published November 2023.
<https://digital.nhs.uk/data-and-information/publications/statistical/general-and-personal-medical-services/31-october-2023>
- ^{xxii} Odebiyi B, Walker B, Gibson J, Sutton M, Spooner S, Checkland K. Eleventh National GP Worklife Survey 2021. PRUComm. April 2022.
<https://prucomm.ac.uk/assets/uploads/Eleventh%20GPWLS%202021.pdf>
- ^{xxiii} Blackburn P. "I;m a natural campaigner". BMA website. October 2023.
<https://www.bma.org.uk/news-and-opinion/i-m-a-natural-campaigner>
- ^{xxiv} Waters A. General practice: Policy makers must value continuity of care over access and targets, GP conference hears *BMJ* 2022; 377 :o1202 doi:10.1136/bmj.o1202
<https://www.bmj.com/content/377/bmj.o1202>
- ^{xxv} Health Services Safety Investigations Body. Investigation report: Continuity of care: delayed diagnosis in GP practices. November 2023. <https://www.hssib.org.uk/patient-safety-investigations/continuity-of-care-delayed-diagnosis-in-gp-practices/>
- ^{xxvi} Golan-Cohen A, Blumberg G, Merzon E, Kitai E, Fogelman Y, Shipotovsky A, Vinker S. Does a policy that requires adherence to a regular primary care physician improve the actual adherence of patients? *Israel Journal of Health Policy Research* (2021) 10:50. <https://doi.org/10.1186/s13584-021-00475-9>
- ^{xxvii} Bonney A, Russell G, Radford J, Zwar N, Mullan J, Batterham M, Mazza D, Peterson G, Eckerman S, Metusela C. Effectiveness of Quality Incentive Payments in General Practice (EQuIP-GP) cluster randomized trial: impact on patient-reported experience. *Fam Pract*. 2022 May 28;39(3):373-380.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9155154/>
- ^{xxviii} Mott MacDonald. Increasing Continuity of Care in General Practice Programme Mixed-Methods Evaluation. April 2022. <https://www.health.org.uk/funding-and-partnerships/programmes/increasing-continuity-of-care-in-general-practice>

Midlands Decision Support Network

Web: www.midlandsdecisionsupport.nhs.uk

Twitter: @MidlandsDSN



**Midlands
Decision Support
Network**