Rapid evidence review February 2022

Digital primary care: Improving access for all?

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Contents

Key messages

UK and international evidence shows that **shifting primary care online can create inequalities in access to health care,** by making it **more difficult for some patients – often those already in poorer health – to get access to the care they need.**

The shift towards online primary care overlays a new **'digital inverse care law' on top of existing inequalities** in access to care, and by making access easier for people who are more likely to be healthy, it increases the **inverse care law.** Rigid implementation of digital and online access **risks locking out patients' who need care most**.

What is needed now is a forensic focus on tackling inequalities in access to care, acknowledging that one size does not fit all while at the same time maximising the opportunities and benefits of digital primary care. **Inclusion, choice and personalisation** are key.

There are important gaps in our knowledge. Available evidence fails to provide a comprehensive picture of the impacts of online and remote primary care on many groups of **patients with protected characteristics,** and it does not offer a clear understanding of **intersectionality** in this context.

Ensuring everyone can access services on an equal footing is a key priority for the NHS. **Any independent and comprehensive review** of the impact of changes in access to primary care during the Covid-19 pandemic **must include the impact on equality of access.**

1. Why does improving access to primary care for all matter?

Ensuring everyone can access health services on an equal footing is a key priority for the NHS.[1] It is already clear that the Covid-19 pandemic, and the wider impacts of changes to the accessibility and delivery of care arising in response to it,[2] are likely to be a strong driver of widening health inequalities for many years to come. What we have yet to grasp is how rapid changes in access to and the delivery of *primary care* might also play into this.

More than 50 years ago, Julian Tudor-Hart first described the 'inverse care law'[3] – highlighting that patients who are most in need of medical care are, in fact, least likely to receive it. One potential driver of health inequalities is unequal access to care [4]. This is why, in this review, we sought to identify evidence that could tell us what impact the shift to online and remote primary care – which happened at scale and pace when the Covid-19 pandemic hit – might have on inequalities in access to primary care. Given that primary care accounts for 90% of patient contact in the NHS,[5] it is vital that the impact of changes to access are properly understood.

> *The availability of good medical care tends to vary inversely with the need for it in the population served. (Tudor-Hart, 1971)*

Research using data collected before the pandemic showed variability in the awareness and use of online appointment booking in general practice among different patient groups, including a strong deprivation gradient.[6] The authors concluded that 'with the constant push for online services within the NHS … practices should be aware that not all patient groups will book appointments online and that other routes of access need to be maintained to avoid widening health inequalities'.[6]

2. Setting the policy context

Figure 1: Drivers of the policy focus on access and the shift towards online and remote primary care

Strategic policy focus on access driven by government – includes a 2019 promise to deliver 50 million more appointments at GP practices

Changing patient expectations: a 2017 commitment to 'extended access', ensuring everyone has 'easier and more convenient access to GP services, including appointments at evenings and weekends'

Commitment to increase provision of e-consulting and online appointment booking at GP practices (2019 GP contract) – limited uptake by patients

'Telefirst' as a policy solution? Claim that telephone triage leads to 20% lower use of emergency departments and cost savings of about £100,000 per GP practice through the prevention of avoidable hospital use. But a large, well-designed trial shows an unexpected increase in workload for GPs (an overall increase of 8% in the mean time spent consulting)

Digital primary care evaluation (Babylon GP at Hand) shows high satisfaction among registered patients

Impact of the Covid-19 pandemic (from early 2020): rapid acceleration of change
A sudden shift away from face-to-face appointments – implemented to protect both staff and patients from the risk of infection

Historic tension between access to and continuity of care

In response to growing patient and media complaints about a loss of access to face-to-face appointments, NHS England issues guidance requiring that every GP practice must respect preferences for face-to-face care unless there are good clinical reasons to the contrary

Response to the pandemic: a rapidly changing picture

April 2020: **'total triage'** mandatory at all GP practices in England, guidance updated September 2020

90% of GP consultations were conducted remotely in April 2020, compared with 33% in April 2019
Early phase of the pandemic (April to July 2020) saw three times more remote consultations by GPs (mainly by telephone) and a three-fold increase in the use of asynchronous messaging, compared with the same period in the previous year

Enthusiasm from the Secretary of State for Health for digital primary care, setting the expectation that consultations be 'remote by default' unless there is a clinical reason otherwise (July 2020)

NHS England issues guidance requiring GP practices to offer face-to-face appointments (May 2021), along with measures to identify 'poorest performers' (October 2021)

Key features, tensions and complexities within the policy context

Shifts towards online appointment booking, and mandated 'total triage',[7] which is in practice often a combination of online triage, telephone triage and telephone consultation, means the way that patients access care at their GP surgery has changed almost beyond all recognition in the past 18 months.

But even before that, improving access to primary care had consistently been an area of strategic policy focus over the previous decade[8,9] with access regarded as one of the 'core dimensions' of quality of care, alongside clinical effectiveness, safety and patient experience. Increasingly, we witnessed a policy focus on enabling digital primary care,[10–12] including online appointment booking and remote consultations – with a perception among policy-makers that this was an effective mechanism for managing demand for GP appointments.[13] This enthusiasm[14] sat in contrast to considerable unease among GP practices themselves about the potential for digital primary care to increase their workload, by introducing new means of accessing a service that is already failing to cope with patient demand.[15]

While some practices hoped this increase in choice would improve patients' access to care, other practices expressed an interest in alternatives to the face-to-face consultation as a means to control how patients gain access to care, 'hoping that alternatives to the face-to-face consultation would "keep patients away"' and 'reduce practice workload, even at the price of placing restrictions on patient access'.[15] This points to the tensions inherent here between improving access to care and controlling access in order to reduce workload for GP staff.

The potential for this shift to increase health inequalities was recognised early on, with research even before the pandemic describing the unintended consequences for health inequalities if providing alternatives to the face-to-face consultation led to increased consultation rates among groups of patients who are confident with technology, but have fewer health needs.[15]

3. What impact does the shift towards online and remote have on equal access to primary care?

Our approach

For this rapid evidence review we used a systematic approach based on Cochrane methodology to identify relevant literature published in peer-reviewed journals or as independent reports since the onset of the Covid-19 pandemic (calendar years 2020–21). More detail about the approach we used is available in Appendices A and B. The scope of this review was intentionally broad and, as shown in Figure 2, included telephone, video and e-consultations, online appointment bookings and online symptom checkers.

Figure 2: Scope of the rapid review

What evidence did we use?

All the studies in our review focused on the use of online appointment booking, triage or remote consultations (or a combination thereof) in the context of patient consultations in primary care. In total, we identified 95 potential studies and, after title/abstract and full-text review to assess eligibility, 17 studies met the criteria for inclusion in the review, with six of these from the UK (see Table 1).

Table 1: Characteristics of studies included in the rapid review

What type of data?

- **Quantitative (5)**
- **Qualitiative (2)**
- **Mixed methods (6)**
- **Systematic review (4)**

Where did this evidence come from?

- **Europe and UK (7)**
- **USA and Canada (6)**
- **Asia, Australia, and Middle East (4)**

What was the intervention focus?

- **Remote consultations (12)**
- **Triage (3)**
- **Online appointment booking (4)**

Just over half (nine out of 17) of the studies included data collected during the pandemic period. The majority were observational studies, with only a small number of these (six) including a comparison with 'usual care'.

What does the evidence show?

The key messages are as follows.

- Evidence shows that **shifting primary care online creates inequalities in access to health care**, by making it more difficult for some patients – often patients who are less well and already materially disadvantaged – to get access to the care they need.

- However, the **messages here are complex**: where digital medicine makes primary care more accessible for individual patients, this has the potential to improve not only access to care but also the quality of care.

- Is it possible to get the most out of digital primary care, while also tackling inequalities in access? Yes, but we are not there yet. To **reduce the risk of making inequalities in access to care worse**, we need a stronger focus on **inclusive** and **flexible routes for accessing care at GP practices**.

Is there evidence that online and digital medicine leads to inequalities in access to primary care?

Yes, but the messages are complex.

Online access and remote care do not work well for all patients – as the Department of Health and Social Care has already recognised.[16] Research shows that delivering care in this way can disadvantage some patients more than others, with non-white patients,[17–19] those living in deprived areas[17-18,20] and anyone with cognitive or communication difficulties[21–23] more likely to be disadvantaged by changes in the way appointments are booked and care is delivered in a model of care where online access and remote delivery are adopted as 'default' settings.

> *While telephone and remote consultations can be more flexible and convenient, they're not right for everyone. (Department of Health and Social Care, 2021)*

In our review, eight studies with a total of 1,664,840 patients (ranging from 326 to 746,356 patients) and three systematic reviews explored the impact of age on access

to online primary care and found that young adults are most likely to use online services,[24,25] with older patients having lower rates of virtual consultations generally,[17,19] although a comparatively high rate of telephone consultation.[18] A number of studies consistently show that women are more likely to use remote consultations than men.[18,24–26] Norwegian research shows that users of e-consultations are much more likely to be young and highly educated, with almost all (95%) describing their digital literacy as average or above average compared with the general population.[24]

Ethnicity is also an important factor, although with evidence of heterogeneous impacts on different modes of consultation. While video consultation and asynchronous messaging are used primarily by white patients,[17,19,27] non-white ethnicity is associated with a higher telephone consultation rate.[18] One US study in our review[19] showed that a non-English language as the patient's preferred language was associated with a 16% lower telemedicine (telephone on video) visit completion rate, suggesting that language barriers to care via telemedicine platforms can be very problematic for some patients – in keeping with the results from another US study in our review.[20] It is not clear to what extent language barriers identified in these two US studies are equally problematic in the context of access to primary care in the UK, although there is some evidence such problems do exist.[4]

The evidence we reviewed shows that high social deprivation – also termed 'social vulnerability' in one US study – is associated with increased barriers to primary care where online access is required, predominantly through lack of access to appropriate technology and the internet.[20-21,23,28–29,] Telephone consultation rates remain relatively high among deprived and more vulnerable communities;[18,20] however, use of asynchronous messaging is low.[17,18,24]

Research from during the pandemic[20] shows that patients in areas of high social vulnerability are significantly more likely to experience barriers to online primary care (with an 18% increase in the likelihood of lacking reliable internet or an appropriate device); they are also more than twice as likely to experience language barriers to telehealth care (15%), in comparison with those with low social vulnerability (7%), suggesting some evidence of intersectionality.

Online primary care requires patients to have access to, and effectively use, digital technology. While for many individuals this is of no consequence, there is a real risk of

widening health inequalities where access to care relies on such resources – resources that are not a 'given' for many of the 1.9 million households in the UK who do not have, and cannot afford, access to the internet.[30] The very significant impact of this on online access to primary care should not be downplayed.

> *Digital exclusion contributes to the inverse care law; it plays out against the backdrop of existing inequalities. We need to make conscious efforts to prioritise inclusion, equality and personalisation. One size does not fit all, and without listening and responding to people's experience, we lock people with more difficult lives out of the care they need.*
> *(National Voices, 2021)*

At the same time, research shows that for some patients digital primary care *can* enable better access and improve quality of care. Choice of different modes of consultation can empower patients previously disadvantaged by traditional face-to-face primary care in two ways: firstly, by breaking down geographical barriers to health care[31], and secondly, by promoting patient autonomy.[18,23,32] Particularly in relation to mental health, evidence shows that remote consultations increase the contact time these patients can have with their primary care provider,[27] as well as widening the reach of treatment programmes delivered by specialist services.[28,33]

Bringing a health care provider to the patient can improve health awareness, and increase preventative health care use, in those less likely to seek health care,[31] as well as facilitating the expansion of more specialist services into the primary care space, virtually – for example by bringing specialist support from psychiatric services into the primary care consultation.[28,33] Also, allowing patients to choose their preferred method of consultation delivery enables the interaction to be tailored towards their individual needs: for some, receiving written (rather than verbal) advice from a health care professional improves communication, and leaves a record of the dialogue for future reference.[32]

Shifting care online has the potential to exchange one set of barriers to care (transportation issues, time constraints) for another (internet access, device capability, digital literacy).[27] At an individual patient level, experience varies a lot and there are no hard-and-fast rules that can be applied to determine exactly who will benefit from or be disadvantaged by the shift to online primary care. Table 1 presents a summary of key

insights from both the research included in our rapid review and research published before the pandemic.

Table 2. Evidence summary: insights from primary care research	
Key messages from recent research (published 2020–21, included in this review)	
	Author(s) and context
A range of international studies show that new tech-enabled forms of consultation, including video consultation and asynchronous messaging, are less likely to be used by patients of non-white ethnicity, and by patients living in more socially deprived areas.	Eberly and others (2020), Parker and others (2021), Rodriguez and others (2021) and Schweiberger and others (2020) – adult and paediatric primary care.
Research using an online questionnaire survey shows that e-consultations are much more likely to be successfully used by patients who are young, highly educated and have higher digital literacy. Service users were highly satisfied.	Zanaboni and Fagerlund (2020) – Norwegian nationwide implementation of digital health services in primary care (N = 2,043).
A large-scale retrospective cohort study demonstrates inequitable access to telemedicine (telephone and video consultations) during the pandemic: older age, Asian race and non-English language were independently associated with fewer successfully completed telemedicine visits. A non-English language as the patient's preferred language was associated with a 16% lower telemedicine visit completion rate.	Eberly and others (2020) – US ambulatory care, all patients scheduled for telemedicine visits in primary care and specialty ambulatory clinics at a large academic health system (N = 148,402).
Key messages from prior research (published before January 2020)	
An independent evaluation of a digital GP service before the pandemic found that patients registering at digital primary care practices tended to be younger, more affluent and healthier – and were motivated by convenience and faster access. Service users reported high satisfaction.	Ipsos MORI and others (2019) – digital primary care (Babylon GP at Hand), England.
Analysis of patient experience using the national GP Patient Survey shows strong deprivation gradients in both the awareness and use of online appointment booking.	Gomez-Cano and others (2020) – primary care, England (N = 647,064).
A mixed-methods case study shows selective uptake of new forms of online consultations, with patients using e-consultation more likely to be white, affluent, young adults.	Atherton and others (2018) – GP practices in England and Scotland (N = 77,513).
A study found both video and telephone consultations to be less 'information rich' than face-to-face care, potentially leading to poorer-quality care (for example through a loss of holistic care and advice on illness prevention).	Hammersley and others (2019) – primary care, England.

Making sense of the evidence: what are the important lessons?

Evidence from this review suggests that patients with the least need for care are, overall, more likely to benefit most from online and digital access to primary care. Research shows that the strong shift to online access and remote primary care, as we've seen implemented over the last two years, risks **making access to primary care less equal, and specifically more difficult for those who are in less good health**.

The emerging picture from UK and international evidence shows how shifting care online exacerbates the inverse care law by making access to care easier for particular groups of patients – i.e. those who are younger, white, highly educated and living in affluent areas. Such patients are also more likely to be healthy and to have lower health care needs.

In contrast, requiring a shift to online and digital primary care leaves some other patients – often those already in poorer health and with higher health care needs – struggling to access care when they need it.

Where digital and remote primary care is implemented in a rigid way that gives patients *less choice* about how they can access care, this causes problems because it shuts out some of the patients who need care most. Flexibility is needed for many people, including those with learning disabilities, dementia, autism, sensory and communication difficulties, and those experiencing homelessness.

A key message is that digital and remote primary care risks leaving patients already more likely to be in poorer health to face a double disadvantage: a new 'digital inverse care law' laid over the top of existing inequalities in access to primary care.

While it's worrying to see evidence pointing towards the emergence of a new 'digital inverse care law', it's just as important to seize the opportunity for primary care leaders and policy-makers to act. In tackling this problem we need an emphasis on inclusion, choice and personalisation. Maintaining inclusive and flexible routes to access care alongside new digital access channels is key: by doing this, GP practices will help to ensure that all patients can access care on an equal footing.

At the same time, where digital medicine makes primary care more accessible for individual patients, this has the potential to improve not only access but also quality of care. These important benefits should not be lost but rather built in as part of new flexible service models.

What needs to happen now?

First, we need to get the policy vision right. This starts with an explicit commitment from policy-makers to ensure every patient can access services at GP practices on an equal footing – re-emphasising that this is a key priority for the NHS. Within policy, we need to see a much stronger focus on getting access 'right', recognising that this is not the same as a focus on rapid access, and more convenient appointment times.

Policy makers also need to clearly understand the likely impacts of policy change on different groups of patients – identifying upfront who may be the 'winners' and 'losers' from changes to service access and delivery.

New priorities set out recently by NHS England for 2022 focus on achieving a core level of digitalisation in all services. At the same time – and in order to deliver on the vision for strengthening a "compassionate and inclusive culture needed to deliver outstanding care" – policy needs to put flexibility and inclusive access at the centre of care, recognising that 'one size doesn't fit all'. This means promoting choice and personalisation with incentives aligned accordingly.

At the same time, we need practical leadership from GP practices and primary care networks (PCNs) working alongside integrated care systems (ICSs) to tackle inequalities in access to primary care at a local level.

As we explain in more detail in our linked Nuffield Trust long read *Digital and remote primary care: the inverse care law with a 21st century twist?*, to be successful this needs to focus on three things: (1) data-driven analysis to better understand population need and use of GP appointments; (2) tackling barriers to equitable access and co-designing inclusive access pathways; and (3) targeting access and prioritising appropriately.

Overall, the evidence we reviewed suggests that the implementation of virtual primary care in its form to date is not enabling equal access to care and – because of this – much of the potential for digital care to help mitigate inequalities in health care is being lost. This represents something of a missed opportunity for primary care and for health policy. Table 3 presents a framework for action.

Table 3: Getting the most out of digital primary care, while also tackling inequalities in access: a framework for action (adapted from NHS England 'what is good access')

What is good access?	We need to develop our understanding of good access, building on NHS England's model of the **right care** delivered to the **right person**, in the **right place**, at the **right time...**
	…To an approach that: • **Recognises** one size doesn't fit all • **Provides** flexible access routes • **Targets** access based on need and acuity • **Creates** inclusive pathways, personalise care
Challenges	Flexibility is needed for many people, including those with: learning disabilities, dementia, autism, homeless, sensory & communication difficulties
	24% of people who are disabled don't have a smartphone for private use, compared to 16% for all adults
	6 million people in the UK cannot turn on a digital device
Solutions	Being inclusive by making care personal
	Maintaining non-digital access pathways alongside new digital access routes
	Targeting care to those who need it most, and actively building this into access, triage and service delivery models
	Empowering patients and promoting patient autonomy
	Making access to specialist services easier, while reducing geographic barriers to care

Appendix A: Our approach

In this report we ask: Does shifting care online improve access to primary care for all patients, and provide access to care on an equal footing? Conversely, we were interested to learn what the evidence might tell us about the potential for moves towards online access, total triage and remote consultations to widen inequalities in access to care at GP practices. This evidence is important because ensuring everyone can access services on an equal footing is a key priority for the NHS.[1]

This report is a synthesis of the available evidence, drawing out what is known while also highlighting where there are gaps in our knowledge. Our analysis explores what the evidence shows about the impact of the shift towards online and remote care on equal access to primary care. In a linked Nuffield Trust long read, _Digital and remote primary care: the inverse care law with a 21st century twist?_, we explore in more detail what the lessons for policy-makers and GP practices might be.

We used a systematic approach based on Cochrane methodology[36–38] as the basis for our rapid review. The review protocol was developed in collaboration with an information scientist, and we used this to complete an electronic search of seven databases (ASSIA, CINAHL, HMIC, MEDLINE/PUBMED, PsycINFO, SCOPUS and SSCI), with records exported to bibliographic management software.

We included literature published in peer-reviewed journals or as independent scientific reports since the onset of the Covid-19 pandemic (calendar years 2020–21). Quantitative and qualitative research, mixed-methods research, primary studies and reviews were all eligible for inclusion. Commentaries with no data component were excluded, as were published abstracts and non-English papers. In addition to academic research, we also reviewed a range of policy-relevant documents (UK only), which were identified using a pragmatic search strategy and snowballing techniques.

To be eligible for inclusion in our review, studies had to focus on the use of online appointment booking, triage or remote consultations (or a combination thereof) in the context of patient consultations in primary care. In total, we identified 95 potential studies and, after title/abstract and full-text review to assess eligibility, 17 studies met

the criteria for inclusion (13 empirical studies and four systematic reviews). Of these papers, seven were from Europe (including six from the UK), with the remainder based on data from Canada and the US (six), Australia (one), Asia and the Middle East (three). Nine out of the 17 papers included data collected from the pandemic period.

Most of the available evidence focused on remote consultations, with a comparatively smaller number of studies examining appointment booking (four) or triage (three). The majority of studies (14) included appointments for general health complaints in primary care, with one of these studies including Covid-19 patients; three studies focused on specific medical areas within primary care (general psychiatry, depression and musculoskeletal problems).

Data from the included studies were extracted into a structured template and analysed thematically as part of developing a preliminary synthesis. The extraction template included information on the study population, research design, intervention, outcome, comparison and data collection period, in addition to more detailed information about the nature of the study and its findings. Drawing on the principles developed by Popay and others,[39] we then began to explore relationships between and within studies, critically appraising the evidence, while also building an overall assessment of the strength of the evidence and using this process to develop and test our emerging narrative synthesis of findings.

A Prisma diagram summarising the process of title/abstract and full-text reviews, along with an example of our search strategy, can be found in Appendix B.

Limitations and gaps in the evidence

The biggest limitation affecting this review is that much of the published available evidence pre-dates the pandemic. Of the 17 papers included in the review, all of which were published between January 2020 and August 2021, only nine contained data collected since the onset of Covid-19 and only one of these used data from England.

This is important because the impacts on inequalities of *optional* online access, which promotes choice and autonomy for patients, are likely to be different in very significant ways to a shift to *mandated* total online triage and online appointment booking, as we witnessed during the pandemic. This distinction is crucial.

In searching for evidence, we were unable to identify any independent and comprehensive reviews of the impact on equal access to care of shifts to online appointment booking, total triage or remote consultations in English primary care during the pandemic.

On the basis of the findings from our review, we conclude that such an evaluation is now needed, to help inform policy choices about the future of primary care. These policy choices should be informed by evidence on the impacts – including unintended potential harms of changes to access – and this must include evidence on the impact on (un)equal access to care.

Recent international literature provides useful insights into inequalities in access to primary care during the pandemic, and these fit with lessons from UK research pre-dating the pandemic. However, where data come from health systems that are different from the UK context – where primary care sits as the backbone within a national health service – some caution is prudent to avoid over-extrapolating lessons from these international health care contexts.

Applying a PICO (population, intervention, comparison, outcome) approach to the results of our review reveals wide variation between individual studies in the nature of the intervention, the comparison group used, and the outcome of interest. Available evidence doesn't give a comprehensive picture of the impacts on many groups of patients with protected characteristics – including for example the LGBT community, and those with disabilities and this is important limitation. Data on access for people with additional needs is missing, with indicators such as carer identifiers, language support needs, and disability support needed.[23]

Finally, while this review provides evidence on the impact of online and remote primary care on equal access to primary care, the effect this might have on inequalities in health outcomes *per se* is outside the scope of the review.

How do our findings fit with what was already known before the pandemic?

Our review was intentionally restricted to studies published since the start of the pandemic (calendar years 2020 and 2021) to maximise relevance to the current primary care context and policy environment, both of which have seen rapid changes at scale and pace in a very short space of time. Before this, research showed that alternatives to the face-to-face consultation were not in mainstream use in general practice, with low uptake in most practices in England and Scotland.[40]

Findings from this review resonate strongly with previous published research in this area. Our findings are consistent with:

- an independent evaluation of a digital GP service before the pandemic, which found that people who use digital primary care tend to be younger and more affluent, and healthier[41]
- research demonstrating that higher deprivation is associated with lower use of online appointment booking[42]
- UK research showing that patients using e-consultation are more likely to be white, affluent, young adults[43], and a systematic review of international evidence also showing that younger employed adults are more likely to use e-consultations.[44]

One of the key messages emerging from our review is the importance of maintaining inclusive and flexible routes to accessing care at GP practices, to ensure all patients can access care on an equal footing. This fits strongly with lessons from previously published work on digital primary care,[45] identifying the key ingredients for successful models of online appointment booking (before the pandemic) and emphasising the need to 'balance actively directing patients to online channels with patient choice'. In one case study, AT Medics left multiple access routes to booking appointments open. This approach enabled practices to encourage patients to become more aware of and use online appointment booking services, while maintaining patients' right to choose.

What has been very different in the context of the pandemic is the diminished 'right to choose' for patients. Rather than optional, online booking has become a requirement

at many GP practices. Published literature does not yet give a full picture of the impact of this change. However, the importance of maintaining patient choice has been emphasised in some recent policy documents.[46]

While our review did not look directly at the quality of remote consultations, there is evidence from research before the pandemic suggesting that both video and telephone consultations are less 'information rich' than face-to-face care, potentially leading to poorer-quality care – for example through a loss of holistic care and advice on illness prevention.[47] This is very consistent with findings in a forthcoming Nuffield Trust policy report from the Remote by Default project, funded by the National Institute for Health Research (NIHR), looking at similar issues in the context of primary care during the Covid-19 pandemic.

Although remote (telephone or email) consultations are perceived by both patients and doctors to be good for 'basic' problems, previous research raises concerns about whether they are appropriate for all patients, or for more complex clinical issues.[40] The complexity and variation between individuals in the benefits/disbenefits of a shift towards online primary care, which we highlight in this review, also fit with findings from an equality impact assessment in Scotland: this raised concerns about digital exclusion and emphasised the need for inclusive communications, while at the same time highlighting the potential benefits for groups with protected characteristics through reducing travel time inconvenience and infection risk.[46]
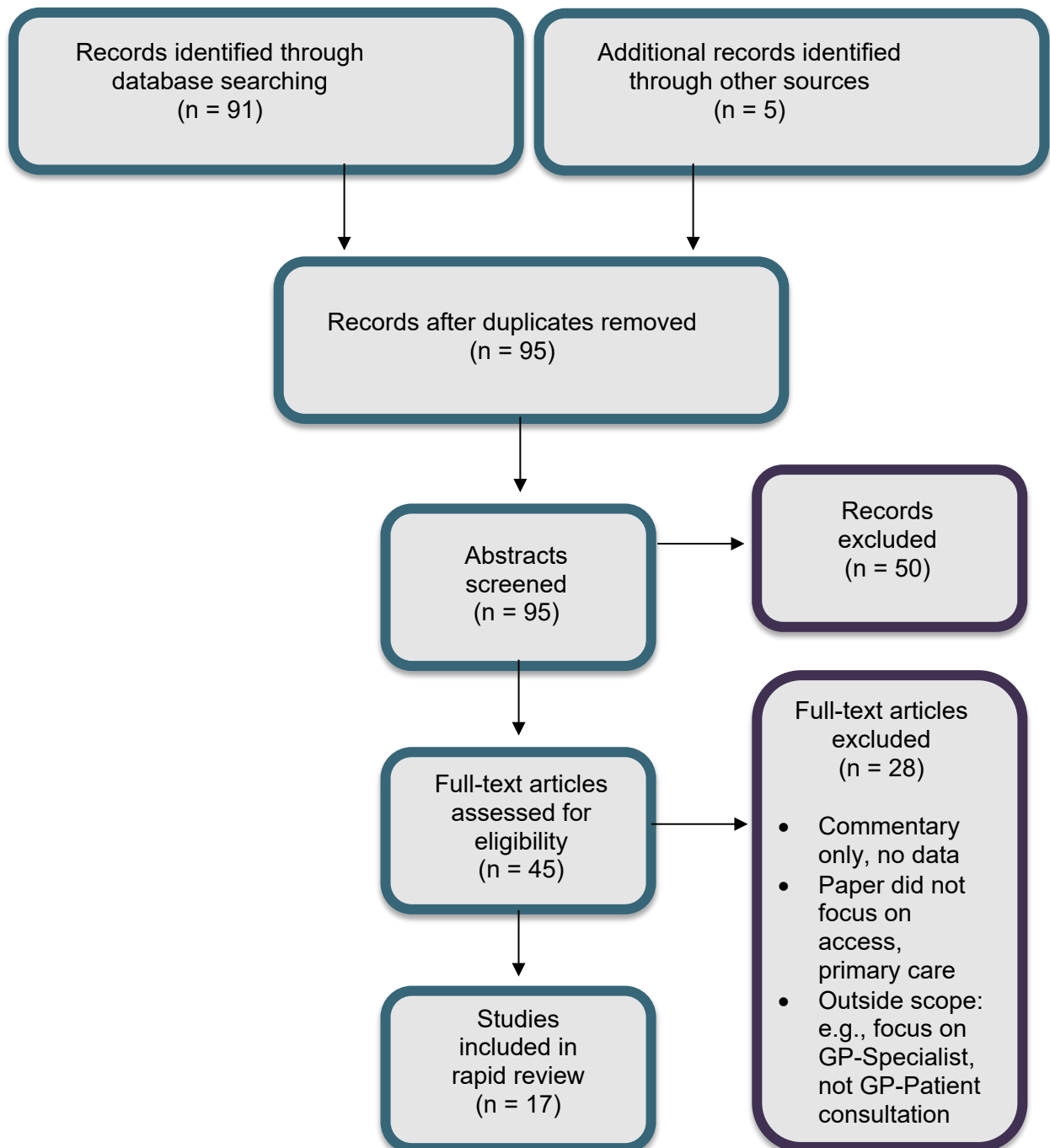
We found almost no research in our review explicitly considering intersectionality or disability in the context of the rapid shift to online and remote primary care. This lack of reliable evidence on the impacts for disadvantaged and more vulnerable patient groups constitutes an important evidence gap, as noted by others in relation to digital primary care[18] and also digital interventions more broadly.[48]

There is now a growing body of evidence showing that the shift towards online primary care makes access easier for people who are more likely to be healthy and with lower needs. That the provision of alternatives to the face-to-face consultation might lead to increased consultation rates among groups of patients who are confident with technology has been described previously as a possible 'unintended consequence', and one that could increase health inequalities.[15] This shows the 'inverse care law' at work in primary care, and fits with broader research demonstrating that for patients

with multimorbidity, those in deprived areas have less time per GP consultation,[49] and evidence over time of growing inequalities in health-related quality of life in England.[50]

On the basis of the evidence we reviewed, and in combination with what was known from research preceding the pandemic, we conclude that those patients with the least need for care are more likely to benefit most from the shift to online and digital primary care. This is concerning. Laying a new 'digital inverse care law' on top of existing inequalities in access to primary care risks making access to primary care even more unequal than it already was before the pandemic, and clearly sits at odds with policy ambitions to ensure everyone can access services on an equal footing.[1]

Appendix B: PRISMA diagram summarising our rapid review process and a search strategy example

Records identified through database searching
(n = 91)

Additional records identified through other sources
(n = 5)

Records after duplicates removed
(n = 95)

Abstracts screened
(n = 95)

Records excluded
(n = 50)

Full-text articles assessed for eligibility
(n = 45)

Full-text articles excluded
(n = 28)

- Commentary only, no data
- Paper did not focus on access, primary care
- Outside scope: e.g., focus on GP-Specialist, not GP-Patient consultation

Studies included in rapid review
(n = 17)

Search strategy (Medline example)

1 GP practice$.ti,ab.
2 general practice$.ti,ab. or *General Practice/
3 family medicine.ti,ab.
4 primary care.ti,ab.
5 primary care nursing.ti,ab. or *Primary Care Nursing/
6 primary care physician$.ti,ab. or *Physicians, Primary Care/
7 gp$.ti,ab.
8 general practitioner$.ti,ab. or *General Practitioners/
9 family physician$.ti,ab. or *Physicians, Family/
10 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9
11 triage$.ti,ab. or *Triage/
12 online access.ti,ab.
13 online booking.ti,ab.
14 telephone access.ti,ab.
15 digital first$.ti,ab.
16 digital-first$.ti,ab.
17 online consultation$.ti,ab.
18 ((Telephone triage$ or remote triage$ or virtual triage$ or video triage$ or video triage$ or phone triage$ or triage$) adj4 (tele$ or e-health$ or ehealth$ or m-health$ or mhealth$ or video$ or cell phone$ or phone$ or telephone$ or skype$ or zoom$ or whatsapp$ or MS Team$ or circuit$ or camera$ or email$ or accurx$ or babylon$ or livi$)).ti,ab.
19 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18
20 remote consult$.ti,ab.
21 tele-consultation.ti,ab.
22 remote consultation.ti,ab. or *Remote Consultation/
23 videoconferencing.ti,ab. or *Videoconferencing/
24 e-consult$.ti,ab. (150)
25 (accurx$ or babylon$ or livi$).ti,ab.
26 (virtual consult$ or virtual online consult$ or video consult$ or video-consult$ or phone consult$ or remote consult$ or remote assess$ or virtual assess$ or video assess$ or phone assess$ or email consult$ or remote consult$ or virtual clinic$ or econsult$ or telemedicine consult$ or telemedical consult$ or virtual gp$ or digital consult$ or attend anywhere$ gp online consult$ or virtual critical care$ or remote first$ or VC$ or digital first$ or digital-first$).ti,ab.
27 ((referral$ or consultation) and (telemedicine$ or tele-medicine$ or telecare$ or tele-care$ or telehealth$ or tele-health$ or telenurs$ or tele-nurs$ or ehealth$ or e-health$ or mhealth$ or m-health$)).ti,ab.
28 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27
29 *Telenursing/
30 tele-nurs$.ti,ab.
31 *Telemedicine/
32 *Telecommunications/
33 online service$.ti,ab.
34 tele-first.ti,ab.
35 29 or 30 or 31 or 32 or 33 or 34
36 10 and (19 or 28 or 35)
37 'Health inequality$' or Equalit$ or Equit$ or Health equity or Inequalit$ or Inequit$ or Healthcare adj4 disparit$ or Health care inequalities or Health status disparities or Vulnerable clinical group$ or Deprivation or Vulnerable groups or 'Clinically vulnerable' or Digital exclusion or Equal access$ or Social exclusion or Disabilit$
38 36 and 32
39 limit 38 to (English language and yr="2020 –current")

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