

Accepted Manuscript

# *British Journal of General Practice*

## Evidence for Access: Systematic Scoping Review of Access Systems in General Practice

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DOI: <https://doi.org/10.3399/BJGP.2023.0149>

To access the most recent version of this article, please click the DOI URL in the line above.

Received 24 March 2023

Revised 20 November 2023

Accepted 11 December 2023

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**Title:** Evidence for Access: Systematic Scoping Review of Access Systems in General Practice.

**Short Title:** GP Access Systems - A Scoping Review

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## **Abstract**

**Background:** Access to GP appointments is increasingly challenging in many high-income countries, with an overstretched workforce and rising demand. Various access systems have been developed and evaluated internationally.

**Aim:** We aimed to systematically consolidate the current international evidence base related to different types of GP access systems.

**Design and Setting:** A scoping review examining international literature.

**Method:** Literature searches were run across relevant databases in May 2022. Title, abstract and full text screenings were carried out. Data from included studies were extracted and mapped to synthesise the components and aims within different GP access systems.

**Results:** 49 studies were included in the review. The majority of these were set in the UK. Some access systems featured heavily in the literature, such as Advanced Access, telephone triage and online consultations, and others less so. There were two key strategies adopted by systems which related to either changing appointment capacity or modifying patient pathways. Components related to these strategies are summarised and illustrated as a schematic representation. Most rationales behind access systems were practice, rather than patient, focused. 'Add on' systems and aims for efficiency became more popular in recent years.

**Conclusion:** The synthesis provides a useful tool in understanding access systems' aims, design, and implementation. With focus on alleviating demand, patient-focused outcomes appear to be under investigated and potentially overlooked during design and implementation. More recently, digital services are promoted as offering patient choice and convenience. But a context where demand outweighs resources challenges the premise that extending choice is possible.

**Keywords:** general practice; primary health care; Appointments and Schedules

### **How this fits in:**

Access to GP appointments poses challenges for general practice and frequently gains media attention. Various booking systems have been adopted to overcome issues, however there is a lack of evidence consolidating our understanding of such approaches. This systematic scoping review provides a broad lens that summarises and maps the different types of GP access systems that have been studied and the rationales behind them. It provides a comprehensive overview to aid understanding, whilst highlighting gaps that appear to be overlooked in the literature.

## Introduction

Access to general practice is a prominent, often contentious concern for policymakers, politicians, service providers and the public. Governments use it as a high-profile benchmark for health service performance (1, 2). Access comprises key elements including choice, timeliness, the physical aspects of access and financial considerations in countries where GP care is not free at the point of use (2). In many countries policy focuses on speed and convenience (3) despite evidence that continuity of care is both safer (4, 5) and preferred by patients (6). Recent amendments to the UK's General Medical Services contract legislate that GP services must progress enquiries (e.g., offer appointments or signpost to appropriate services) on the same day that patients make contact (7). However, the GPC England (the representative body for GPs in England) asserts general practices currently do not have the workforce nor resources to adhere to deliver this (8).

Access becomes a problem when demand exceeds supply, a reality increasingly facing health systems globally. Unmet demand for primary care has risen in recent years (9-11), fuelled by retention and recruitment crises in general practice (11-13), an ageing and increasingly multi-morbid population, and changes to care delivery in response to the Covid-19 pandemic (14). Patient reported satisfaction with access to UK general practice has reduced year on year since 2018 in the UK (15).

General practice access systems have mainly focused on managing 'supply and demand' by the use of patient triage assessment by phone or online (16), by varying appointment availability, length or number of problems considered (17), diverting to other staff such as physician assistants (18) or offering other modalities such as asynchronous consultations online via text message/email or real time telephone or video consultations (19, 20). A recent systematic review noted a paucity of evidence about the impact of remote consultations on continuity of care, and suggested that multiple, inter-related factors influence continuity and the quality of access (21). Digital technologies often offer solutions to the access problem (22) but there is evidence of their unintended consequences (23, 24).

Research on GP access systems has sought to inform service delivery (20, 25-27) but often focusses on a single aspect (e.g., digital platforms) or initiative (e.g., Advanced Access). Our intention in this scoping review is to map the current evidence base relating to access systems to inform research and guide decisions in general practice.

## Methods

We aimed to describe the different types of access systems previously studied and reported in the research literature in the previous 20 years, thus conducting a scoping review was appropriate (28). Using established scoping review methods (29), we followed five steps: 1) identifying the research question, 2) identifying relevant studies, 3) study selection, 4) charting the data and 5) collating, summarising and reporting the results.

This scoping review was conducted as part of a larger funded project looking at access to general practice (30). A scoping review design was chosen to provide a rapid summary of research conducted in the previous 20 years to inform the next stage of the project and map the research field. A 20-year cut off was applied to ensure that the research studies identified were as contemporary as possible whilst including some of the history of research in this field.

### *Identifying the research question*

To identify and describe the different types of access systems studied we developed a research question: What types of access systems for general practice have been empirically studied?

### *Identifying relevant studies*

We included studies that examined the use, application, or evaluation of an access system within a general practice setting. We defined access systems as those providing access to an appointment for a consultation. We focused on routine general practice care excluding studies investigating access to 'out of hours' urgent care services, even if in primary care settings. Participants of interest were patients, staff, or both. Studies focusing on access limited to a specific condition or follow-up appointments were excluded.

We included any empirical study design (quantitative, qualitative, or mixed methods) published in English. We excluded editorials, debate pieces, conference abstracts and reviews.

The search strategy was limited to studies published after January 2001 (to ensure contemporary relevance). On 24<sup>th</sup> May 2022 the search was run within Medline; Embase; PsycInfo; Cochrane Trials; Web of Science; and Scopus databases. (See: Supplementary Box 1)

### *Study selection*

Titles, abstracts, and full texts were independently screened by two researchers before selection for the review. A third reviewer resolved any disagreements about inclusions.

### *Charting the data*

We extracted study characteristics and information about the access system studied. This included access systems' descriptions; components; rationales; modes of contact; and staff members facilitating use. In line with guidance for scoping reviews (31) and our aims, we did not undertake critical appraisal of the studies, however we assessed the relevance of each included study (i.e., does the research address the topic and allow us to add to the descriptions of access systems?) and credibility, (i.e., does the research support the conclusions drawn?). [This approach has been successfully used in similar reviews \(32, 33\).](#)

### *Collating, summarising and reporting results*

The included studies were summarised using narrative synthesis (34), this involved three steps:

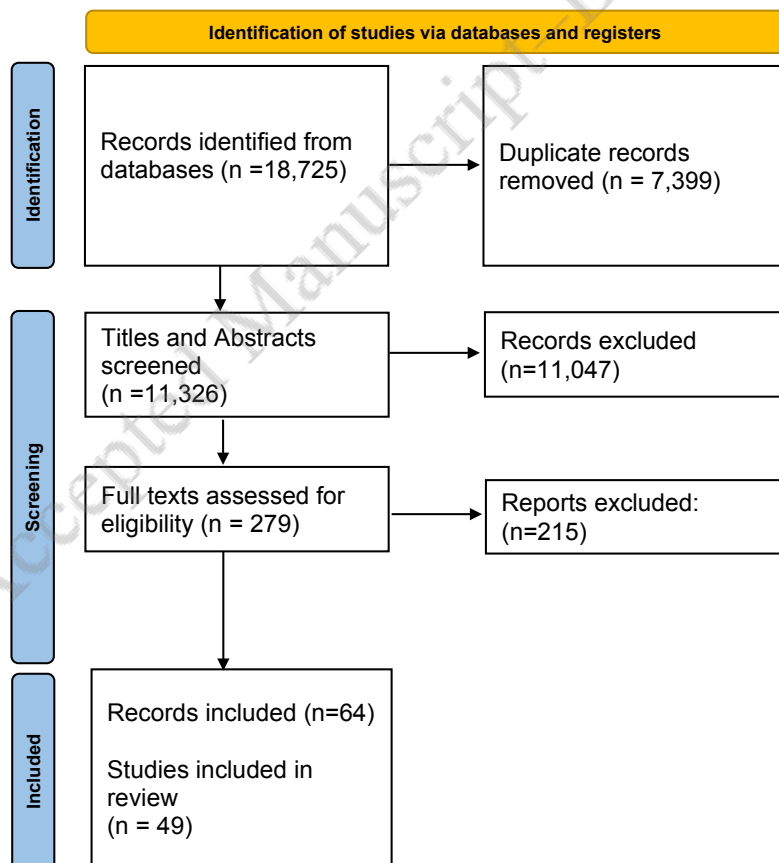
- 1) Preliminary synthesis using text and tables to present the studies' characteristics and describe the access systems.
- 2) Further synthesis of study characteristics and access systems descriptions to develop an initial overview and schematic representation. This detailed the key elements within studies and visually mapped out organisational approaches and pathways used within access systems.
- 3) Refinement of synthesis with input from key stakeholders (including GPs and public) to assess robustness and applicability. This allowed further development of the synthesis and the schematic representation, illustrating how different access systems fit within general practices.

## Findings

### Search Results

The initial search yielded 11,326 (deduplicated) records. After screening titles and abstracts 279 full texts were assessed. Of these, 49 studies (25, 35-78), reported across 64 publications (79-93), were included (Figure.1). Most included studies were UK-based (n=33), followed by Sweden (n=4), Norway (n=3), Spain (n=3), Australia (n=2), Denmark (n=2), New Zealand (n=1) and the Netherlands (n=1). Of the included studies, 23 were quantitative, 14 were qualitative and 12 used mixed methods. Levels of relevance varied between studies, but all provided partial or comprehensive evidence that informed the review.

Figure.1 Flow diagram: Results from the Screening process



### *Impact of Covid-19*

No studies set out to examine the impact of the Covid-19 pandemic, but two were unexpectedly affected by it (55, 76). Ure 2022 (76) reported that increased respiratory complaints led to adaptations to the access system, whereby nurses (rather than GPs) were deployed to triage patients. Following then current New Zealand health guidelines, those with respiratory complaints were offered an in-person review which led to fewer patients being treated remotely. Jones 2022 (55) reported no access system adaptations in their UK study, but reported that social distancing led to increased use of the online platform being studied.

### *The Access Systems*

Some approaches featured prominently in the literature. Advanced Access, different forms of telephone triage, and online consultation platforms were the subject of several studies and are outlined in the first part of Box 1. Other studies examined bespoke approaches to access, often with similar components to those mentioned above. These approaches included redirection; appointments with other (non-GP) healthcare professionals; direct booking and introducing new appointment types, timings, or modes of access. Components of these systems are outlined in the latter part of Box 1. There is repetition within Box 1 as access systems had elements in common.

Some access systems were 'whole systems' that all patients used, others were 'add-ons' introduced alongside existing systems, and in some cases, this was not clear from the publication. 'Whole Systems' have been studied consistently since 2001, whereas 'add-ons' became more popular from 2017 onwards, reflecting the advent of 'add-on' digital alternatives for contacting GPs (41, 43, 46, 47, 55, 78, 80).

Box 1: The Access Systems	
Access System	Presence in Literature
<i>Approaches commonly studied.</i>	
Advanced Access	Advanced Access dominated the literature with nine studies examining this approach (35, 38, 45, 52, 56, 66, 69, 93, 94) and three reporting variations of it (61, 67, 77). These studies spanned across three countries: the UK, Australia and Denmark. Advanced Access aims to manage demand, often by offering same day appointments to prevent long waiting times. When setting up the system the pattern of appointment requests is assessed, and capacity temporarily adjusted to clear any backlog. Appointment access focusses on seeing patients on the day they contact the surgery and limiting how far ahead patients can book appointments. Patients are often allowed to address more than one health concern per visit, and typically practices reorganise staffing levels to clear backlog and/or provide contingency staffing (56).
Telephone Triage	Eleven studies referred to a form of telephone triage (40, 42, 52, 54, 57, 60, 62, 65, 71, 72, 76), whereby patients discussed their problem over the phone with a member of staff in the first instance, with subsequent advice or appointments based on this interaction. This approach aims to improve access, alleviate demand for face-to-face appointments, and reduce non-attendance. Five of these studies examined telephone triage by GPs (52, 54, 57, 60, 65), three investigated telephone triage by nurses (42, 71, 72), two

	looked at triage by both GPs and Nurses (40, 76) and one paper did not state which staff member carried out the triage (62).
Online Consultation Platforms	Seven studies assessed online consultations or e-consultations whereby patients submit an online form describing their request or problem. A staff member assesses the content and responds, fulfilling an administrative request, or arranging a consultation (via phone, online messaging, or face-to-face). This approach has also been described as 'online triage'. Six of these studies were UK based (25, 41, 43, 46, 47, 55) and one was Spanish (95). Online consultations are often used alongside other access systems, providing an alternative mode of contact for patients. They are often designed to encourage self-management.
<i>Other approaches studied.</i>	
Redirection	Redirection was a common approach in which patients were signposted to self-help advice, NHS111 (UK), pharmacies or to make solely administrative requests e.g., repeat prescriptions
Non-GP Healthcare Professional Appointments	Some systems introduced more appointments non-GPs healthcare professionals. Instead of seeing a GP in the first instance, patients were triaged to an appointment with another professional instead, e.g., a practice nurse, psychotherapist, counsellor (59, 68, 70, 72, 96).
Direct Booking	Two studies examined systems that enable direct booking. i.e., patients have a choice of GP appointment slots to select and book directly without gatekeeping or triage. Those studies that did examine direct booking were assessing the introduction of a new 'add-on' mode for direct booking. These included direct booking via an online platform (53) and SMS text messaging (64).
Limiting Appointment Availability	Having a limit on the number of appointments that were pre-bookable or the number of same day appointments (51, 77) in attempts to manage high demand.
New Appointment Types or Timings	Some systems introduced new types or timings of appointments, such as extended hours outside the working day (96) and short review appointments for those with long-term conditions (74).
New Modes of Access	For most patients, initial contact to book a GP appointment was via phone. However, some systems introduced new modes of access including online (48, 49, 57, 78, 97) SMS (39, 64) and a in person 'sit and wait' surgery (67).

### *Rationale for Different Access Systems*

Nine studies did not report the access system's rationale (41, 46, 58, 61, 64, 66, 69, 76, 77). Where reported, access systems were most commonly intended to manage demand and improve efficiency (n=28) (35-40, 42-44, 47-51, 53, 54, 56, 60, 62, 65, 71, 72, 74, 75, 78, 95-97), with 'efficiency' more commonly reported from 2017 onwards. Some described aims related to improvements for patients, such as convenience, reduced waiting time and access to healthcare advice (n=17) (25, 37-40, 45, 47, 52, 57, 59, 63, 65, 67, 70, 74, 78, 94), often coupled with practice-focused aims such as efficiency or managing demand (8/17 studies). Two UK based studies referred to government policy when describing the reasons behind introduction of the access system (68, 77). Studies examining online platforms in particular stated aims to improve efficiency and reduce face-to-face visits, see



Supplementary Table 1. Only six studies examined how the access systems were used by specific groups (37, 40, 53, 65, 76, 78), but such investigations were limited not a primary focus.

### *Categorising Access Systems*

As noted above, the rationale behind most access systems was described as being to alleviate pressure on general practice, often specifically to reduce GP workload. We broadly distinguished the approaches into two groups: those designed to a) modify patients' pathways to obtaining appointments (includes any type of consultation, e.g., call back from, or asynchronous messaging, with healthcare professionals), or b) alter appointment capacity (through reorganisation of appointments). Systems were designed according to one, or combined both, of these approaches.

#### a) Modifying patients' pathways.

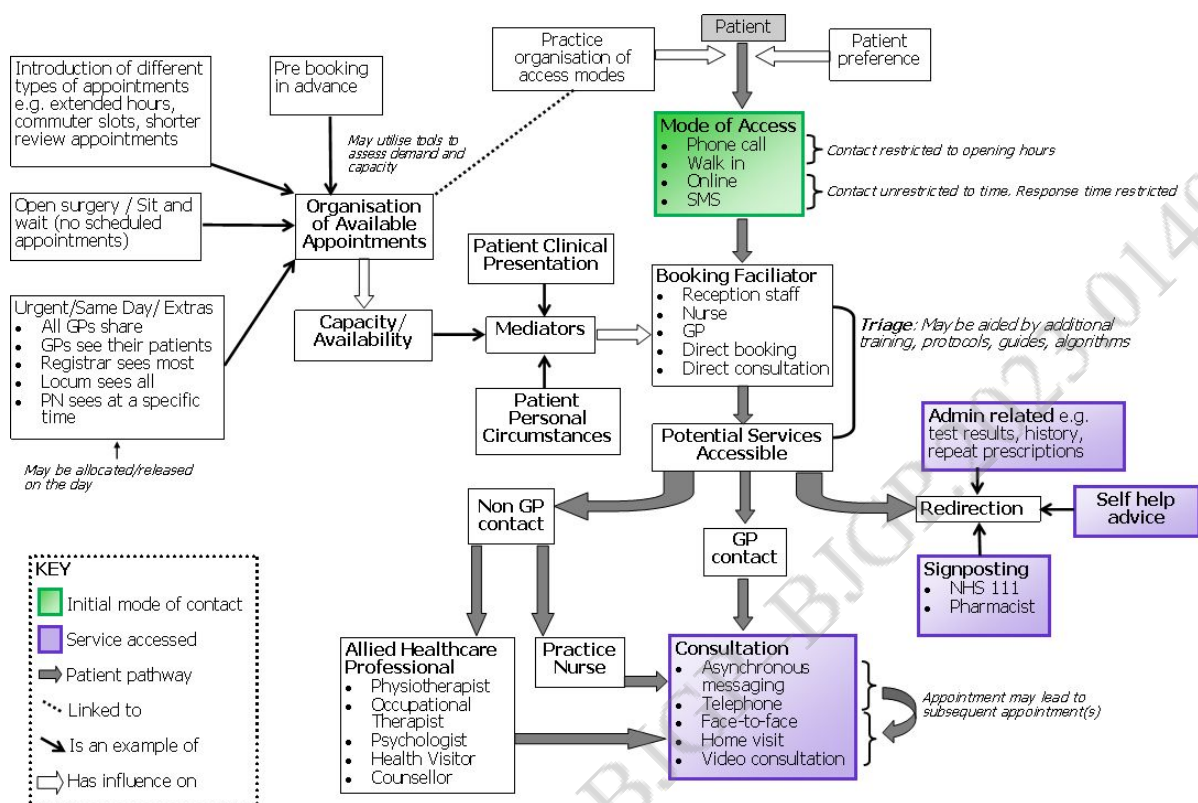
Approaches to modify appointment booking pathways varied. These included: triage of patients based on need before offering an appointment; changing the mode of contact; arranging appointments with non-GP healthcare professionals; or signposting to self-help advice and other services (NHS 111 or pharmacist). How these pathways were administered differed, some systems used staff judgment, whereas others used algorithms (either automated or as a guide for staff members to follow).

#### b) Altering appointment capacity.

Many systems revised the availability and organisation of bookable appointments. Strategies included limiting how far in advance appointments could be booked; introducing a 'sit and wait' open surgery; deploying one GP to see urgent same day patients; and introducing different types of appointments (described above). Some systems offered new appointment types with aims to have more efficient use of services e.g., extended hours to alleviate the pressure during normal opening hours, or shorter routine appointments for patients with long term conditions. Changes to appointment capacity was sometimes adopted alongside modifying the booking pathways.

Included studies examined access systems that adopted one, or both, of the strategies above. The relationship between these access strategies is complex and dynamic as illustrated in the schematic representation (Figure 2), which maps the key components, how they influence each other and connections between them.

Figure 2. Schematic Representation of the Components of Access Systems Empirically Studied



## Discussion

### Summary

We describe the varied and dynamic components that make up GP access systems reported in the literature and offer a schematic representation of our findings (Figure 2). The figure summarises and distinguishes the different approaches to GP access and offers a tool to identify gaps in the evidence base. Reflecting changes in government policy, and innovation (and promotion) of digital approaches, the review identified imbalance in the type of systems studied, with some featuring more frequently in the literature and some changes of reported rationale over time. Managing demand was a common and consistent aim within access system research, with efficiency aims featuring more in recent years, as did the ‘add-on’ approaches associated with newer digital access systems.

### Strengths and limitations

This international scoping review allowed comprehensive consolidation of evidence from research conducted since 2001 about approaches to GP access systems set in countries with universal healthcare, although only including studies published in English was a limitation of the review. The scoping review did not intend to map the entire history of access research, as this was beyond its scope and would be better suited to a systematic review design. Including studies published since 2001 enabled this scoping review to provide an overview of systems that are used by, and relevant to, current general practice settings. Over the last 20 years general practice has seen much change in

how access is organised and delivered alongside societal level changes to communication technologies, including the introduction of broadband internet in the early 2000s (98) and growing widespread use of increasingly sophisticated smartphones by the general public since 2007 (99, 100). Our inclusion period captures these important changes, but our scoping review does not include studies predating 2001 and may have omitted useful content as a result. Most of the studies included were set in the UK, reflecting a strong field of academic primary care research and the importance of general practice within the NHS. This makes the findings particularly relevant and applicable to current day British general practice and the challenges of access, whilst being potentially transferable elsewhere. All the studies included were assessed as credible and relevant strengthening the review's findings.

Consultation with stakeholders highlighted some access systems, and adaptations, not (yet) present in the literature, e.g., more recent digital approaches. Thus, this scoping review is not an exhaustive account of all existing/emerging systems and adaptations that are currently in use, rather it comprehensively reflects published research. The schematic representation may provide a useful visual aid for policy makers, politicians, service providers and the public/patients when considering and discussing the components of access systems and how these interact.

#### *Comparison with existing literature*

In recent years digital services have been promoted as offering patient choice and convenience, with an expectation that UK general practices will offer 25% of their appointments as bookable directly online (101). However, the rhetoric of choice and convenience contrasts with those access systems that aim to alleviate demand by limiting appointment availability. Such conflicting priorities may – to some extent – explain why patient satisfaction in UK is at all-time low (15). A context where demand outweighs resources challenges the premise that extending choice is possible, without significantly more GP resource. Even if giving patients a choice of appointment slots does not lead to increased pressures, non-attendance, or inappropriate use (102), it is easy to appreciate why service providers are wary that it might. A modelling study examining the introduction of digital approaches to access examined supply-related demand and forecasted increases in workload (103).

The system known as 'Advanced Access' featured heavily in the literature, which may be because it was highlighted as an effective model in the UK government's £48 million to 'Primary Care Access Fund' between 2002-2003 (104). This coincided with 'The NHS Plan' access targets to provide all primary care patients an appointment within 24 hours, and a GP appointment within 48 hours (105). Such targets may help explain why Advanced Access systems incorporate 'same-day appointments' to manage access, although it should be noted that Advanced Access does not necessarily stipulate 'same-day appointments' (94). Such adaptations demonstrate how access systems are shaped by context and political factors. Advanced Access is framed politically as providing prompt access for patients, whilst at practice level it is used to manage demand. However, limits to bookable appointments may lead to unmet needs for some patients that go undetected within the studies that typically focus on GP workload as their outcome measure. Whilst prompt access to appointments is arguably appealing, the potential impacts on access and continuity of care for those patients unable to pre-book for a different day, or with specific GPs, ought to be considered with the introduction of such systems. Recognition of patients unable to prebook appointments potentially led to the recent changes to the UK's General Medical Services contract, which stipulate GP services must progress enquiries on the same day that patients make contact (7), but the practicalities and impact of this is yet to be seen.

#### *Implications for research and practice*

Most access systems that have been the subject of research are intended to manage demand, often by reducing pressure on GP workload, rather than seeking to improve patient-focused outcomes such as ease of access, satisfaction, health status, and safety. With emphasis on organisation-focused outcomes, more patient related outcomes appear to have been, at times, overlooked in the design of research studies about access systems. Movement towards aims for efficiency in recent years suggests there is recognition that the solution is more nuanced than reducing resource pressure but may instead lie in patients accessing the most appropriate appointment for them.

In the UK, equality legislation stipulates that all public sector entities should remove or minimise disadvantages to those with protected characteristics (106) which include age, disability, gender reassignment, race, religion or belief, sex, sexual orientation. Yet we found that very few studies examined how access systems worked for such groups, and investigations were limited in those that did; a gap that was highlighted by our patient and public advisory panel in response to our initial scoping review draft. This evidence gap has political and policy implications, and our wider review findings suggest that research and policy may need to look beyond managing demand and GP workload to find practice and patient focused solutions. Research into implementation of such systems, how they work within dynamics of practices, associated costs, their sustainability and potential impacts for different groups would be of value.

The published literature tells us little about how these systems have adapted or were shaped by their contexts e.g., changes to GP contracts, political environments, and unexpected challenges (such as Covid-19). Informed by this scoping review our team has begun a major ethnographic study (the GP SUS study, funded by NIHR HSDR) to examine how pre-existing GP access systems were used, adapted, or abandoned according to local contexts as well as the Covid-19 pandemic and its aftermath.

#### Acknowledgements

The team would like to acknowledge the GP SUS study patient public panel (Clara M. de Barros, Hameed Khan, Stella O'Brien, Al Richards, N Vu) for providing feedback at various stages of the review. We would also like to thank those who gave up time to attend the stakeholder events to inform development of the review. We are grateful to Sam Johnson, a librarian who assisted in developing the search strategy. We also thank Eleanor Watson, Julia Gaulty, Catherine Grimley, Helen Leach, Armina Paule and Helen McGowan for their support during the screening stages.

Prof Pope is an NIHR Senior Investigator.

Prof Ziebland is an NIHR Senior Investigator emerita.

This study is funded by the NIHR HS&DR Programme (NIHR133620). The views expressed are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.

#### Competing Interests

Authors have no competing interests.

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Accepted Manuscript—BJGP—BJGP-2023-0149