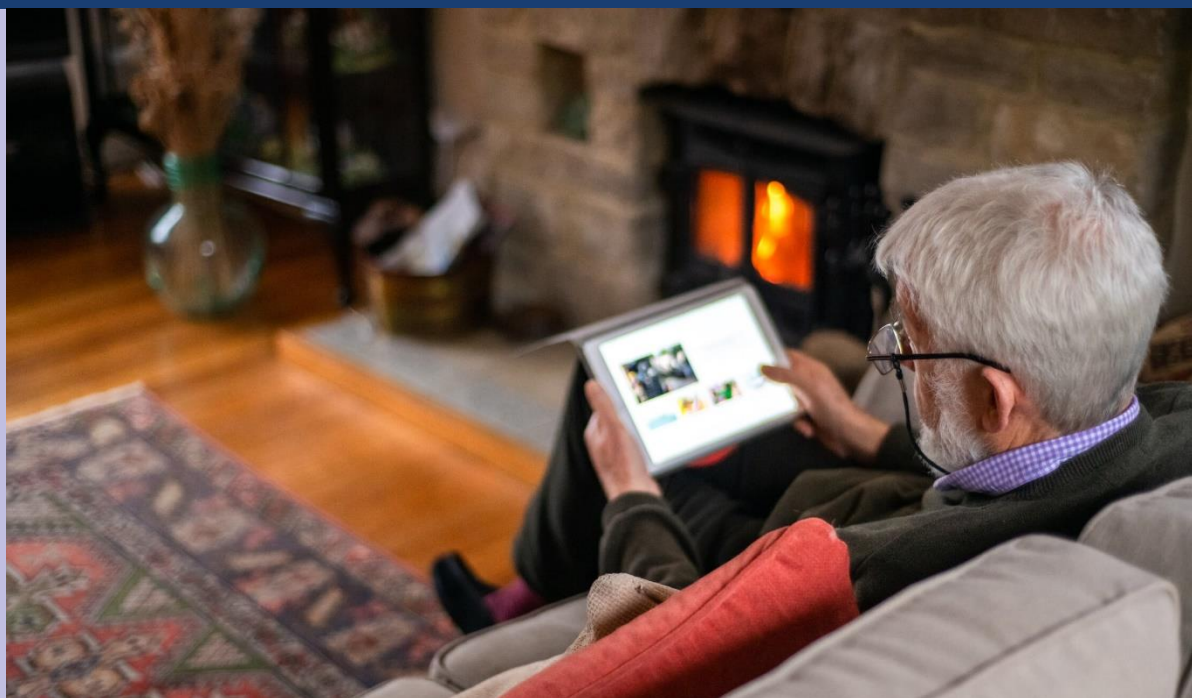




Impact of digitalisation on access to primary care for older people during the COVID-19 pandemic: an analysis using OpenSAFELY

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Impact of digitalisation on access to primary care for older people during the COVID-19 pandemic: an analysis using OpenSAFELY

Executive Summary

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Background

In line with digital transformation in primary care, the NHS Long Term Plan envisioned a 'digital-first' approach to service delivery, prioritising digital access as a cornerstone of healthcare provision [1]. The increased transition to digitalised health services, while offering numerous benefits, raises concerns about potentially amplifying health inequalities from the inadvertent digital exclusion of certain demographic groups. Inequalities in access to digital health involves factors including age, socioeconomic status, education level, ethnicity, limited infrastructure in rural or deprived areas, and people's digital skills, motivation, and health literacy [2]. As a feasibility study, we examined the potential of using the OpenSAFELY platform to investigate variations in remote consultation before and during the COVID-19 pandemic. OpenSAFELY is a secured research environment for accessing electronic health records (EHR) created during the pandemic to facilitate urgent research. It is a collaboration between the Bennett Institute for Applied Data Science at the University of Oxford, the electronic health record (EHR) group at London School of Hygiene and Tropical Medicine, The Phoenix Partnership (TPP), Egton Medical Information Systems (EMIS) and other electronic health record software companies (who already manage NHS patients' records), working on behalf of NHS England [3]. In this report, we present the patterns and trends in telephone, video, and online GP consultations (hereafter referred to as 'remote consultations') among older people in England before and during the COVID-19 pandemic..

Methods

Retrospective cohort study using pseudo-anonymised patient data from healthcare consultation records in England. Through the OpenSAFELY platform, we analysed approximately 19 million records from the TPP database between 2019 and 2022 for individuals who were aged 18 years and over. The TPP database includes 24.2 million individuals presently registered with 2,546 GP surgeries employing TPP SystmOne software and covering approximately 40% of all practices in England [4]. The TPP data are generally representative of the English population [5] and contain information such as patient data (age, gender, ethnicity, index of multiple deprivation), clinical case definitions, covariates, and outcomes. These are benchmarked to Office for National Statistics standard populations to enable rapid comparisons between the study and national populations.

Variables:

- Remote consultations: Remote consultations, including telephone, computer link, video, text, remote, e-consultation events were included in this study. The remote consultations variable was defined using virtual consultation clinical events in TPP. The focal point of analysis was the first national lockdown day in the UK, 23 March 2020 [33]. This date served as a reference point for distinguishing between the pre-pandemic period (23 March 2019 – 22 March 2020) and two years of the pandemic period (23 March 2020 – 22 March 2021) and (23 March 2021 to 22 March 2022).
- Total appointments: Due to inconsistency in the coding of face-to-face events in the OpenSAFELY-TPP database, we opted to use available appointment data (appointments table) to investigate patients who had been "seen" as evidence of an appointment event instead of using face-to-face codelists. More caveats relating to consultation data via OpenSAFELY have been documented in another study [24]. The appointment table in the OpenSAFELY-TPP database comes with three columns (patient_id, seen_date, status) to filter patients' appointment. To query the

appointments table, we followed the recommendations from OpenSAFELY by creating total appointments using 'seen' as well as 'arrived', 'in progress', 'finished', 'visit', 'waiting', and 'patient walked out' [6]. Appointment records from the OpenSAFELY-TPP appointments table were counted for each patient and utilised as denominator for the consultation data.

- Covariates: Patients' age was categorised into five age bands (18 to 49 years, 50 to 64 years, 65 to 74 years, 75 to 84 years, and 85+ years). Gender was categorised into Women and Men. Ethnicity was grouped into the Office for National Statistics' higher-level categories as "Asian, Asian British, Asian Welsh", "Black, Black British, Black Welsh, Caribbean or African", "Mixed or Multiple", "White", "Other ethnic group". Deprivation status was based on scores from the English Index of Multiple Deprivation (IMD). Although it was initially intended to investigate point changes in IMD scores, we defined area deprivation using IMD quintiles (quintile 1 — most deprived; quintile 5 — least deprived) due to processing capacity of the OpenSAFELY platform.

Statistical analysis:

Descriptive statistics were used to investigate the monthly proportion of remote consultations in total appointments over the study period, and binomial regression with marginal effects (probabilities) was conducted to quantify variations in the probability of remote consultations. The probabilities were based on best-fit logistic regression, incorporating age, gender, ethnicity, area deprivation and time-period. The interactions of time-period with age, gender, ethnicity, and area deprivation were evaluated. Outputs are reported as Odds Ratios and probability (proportion) with 95% confidence intervals (CIs).

Results

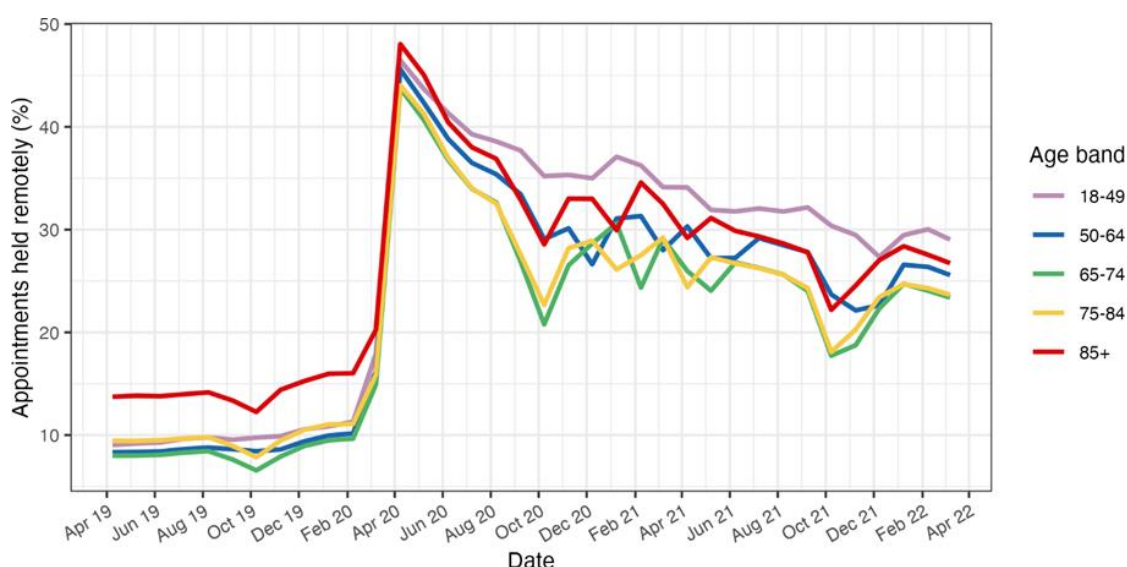


Figure 1: Monthly proportion of remote consultations by age-group (2019-2022).

Using the OpenSAFELY TPP data, between March 2019 and March 2022, we found the trends in remote consultations were as follows:

- The annual number of remote consultations increased from 10 million remote consultations in the pre-pandemic period (March 2019 – March 2020) to 32 million in the pandemic years (March 2020 to March 2022) – an increase of over 200%.

- The proportion of remote consultations rose from 10.2% before the pandemic to 34.1% and 27.2% in the first and second years of the pandemic respectively.
- Analysis by age showed that pre-pandemic, whilst 85+ year olds had the least overall number of remote consultations of all adult age-groups, they also had the highest probability of a remote consultation (13%). However, in the pandemic years, the probability of remote consultation increased for all age groups with those age 18-49 years having highest proportion and those age 85+ having the second highest proportion.
- Analysis by gender showed that men were less likely to have remote consultations compared to women across the entire study period.
- Analysis by socioeconomic status showed that prior to the pandemic, people from the two most deprived Index of Multiple Deprivation (IMD) quintiles had higher probabilities of remote consultations (IMD 1&2; 0.103 and 0.104, respectively) compared to people from the two least deprived quintiles (IMD 4&5, 0.094 and 0.086 respectively). This trend was maintained through the first two years of the pandemic with the most deprived group being more likely to have remote consultations.
- Analysis by ethnicity showed that in each of the three years analysed, White people were the ethnic group most likely to have a remote consultation. In both years of the pandemic, people who are Asian, Black or have Mixed ethnic background had a smaller relative increase in the probability of a remote consultation than people who are White.

The analyses presented in this report is not without certain caveats or limitations. It is important to note that some assumptions have been made about the TPP data. An assumption that there was no change in practices by patients during the study period, as appointment data are currently not carried forward when a patient changes their practice to another using a different EHR provider, or when a practice changes EHR provider. There was also lack of clarity on what constitutes the total appointment data and the trigger of 'seen' patients. If an appointment was recorded multiple times under different appointment statuses, it was impossible to identify this because of the insufficient metadata provided by TPP. However, given that the appointment data was used as a denominator it was unlikely to impact the proportions found.

Conclusion

Increased use of digital services is part of an NHSE policy for improving access to primary care and aligns with government policy for a national transition to digital telephony scheduled for completion in 2025. There are some concerns that a transition to digital services in primary care may exclude access for some older people. We found that 85+ year olds had largest proportion of remote consultations pre-pandemic but younger adults were more likely to have remote consultations during the first two years of the pandemic. There is also a persistent gender-gap in remote consultations, and differences by ethnicity and deprivation status. Whilst our findings show that there were significant variations in remote consultations during the pandemic, digitalisation may also have contributed to a greater number of appointments overall, potentially reducing barriers to primary care. Further research is warranted to examine the impact of these variations on health outcomes and OpenSAFELY as a platform for conducting such analysis is feasible.

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