Video Consultations in Secondary Care

A report by Edge Health for NHS England and NHS Improvement | September 2021

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Introduction

Foreword

The last 18 months have proved how important the NHS is to all of us. The hard work and commitment of NHS staff to not only care for those directly impacted by COVID-19 but to also keep the rest of the NHS functioning should not be underestimated. As a CEO of an NHS hospital, I have been amazed by the hard work and commitment of NHS staff across the country who have found new and innovative ways to quietly deliver and improve patient care in the most extraordinary circumstances.

The pace and scale of video consultation adoption across NHS secondary care settings, as articulated in this report, is one example of this impactful transformation that began in March 2020 and continues today. I have seen this change happen first-hand, through providing ongoing advisory support to the NHS National Outpatient Transformation team, through my previous role at Moorfields Eye Hospital and in my new role at University College London Hospitals, where teams in both trusts have worked tirelessly to implement and embed video consulting as another medium to enable us to better care for our patients.

David Probert, Chief Executive Officer, University College London Hospitals NHS Foundation Trust

This report highlights a number of fascinating insights and is a useful contribution to the growing and largely positive evidence base around the use of video consulting in the NHS. Contributions like this report and other related evaluations that have emerged will all help support the case for continued adoption and innovation in this area.

Whilst many benefits to patients are highlighted in this work, the challenge for NHS England and NHS Improvement is to now help trusts and systems raise patient awareness of video consultations as an option available to them when they access NHS secondary care services. Only by showing patients the benefits of video consultations and backing this up with the necessary support to access care in this way will we truly be able to safeguard the progress made and realise further opportunities in how video technology can help improve patient care.

Background

In January 2020, Edge Health was commissioned by NHS England and NHS Improvement's Outpatient Transformation Programme to undertake an independent evaluation of the outpatient video consultation pilot that had started in April 2019. The pilot worked with NHS trusts in England to better understand the national role in supporting the adoption, spread and scale of video consultations in secondary care settings. The work was designed to support the delivery of the commitment in the NHS Long Term Plan to provide all patients with the choice of a virtual outpatient appointment where appropriate.

Edge Health was appointed to undertake the evaluation following a competitive procurement, which started in January 2020. Shortly after sharing initial findings in late February 2020, the COVID-19 pandemic significantly changed the circumstances of the NHS.

As part of the NHS' response to the pandemic, supporting the rapid uptake of video consultations across secondary care, including mental health and community, became a priority for NHS England and NHS Improvement. To deliver this, NHS England and NHS Improvement procured and funded a national license to a secure web-based video consultation platform, Attend Anywhere.

Access to Attend Anywhere provided all trusts and foundation trusts the option to use the video consultation platform for 12 months to support local responses to the pandemic. Implementation support was also provided nationally and through regional teams.

Due to the accelerated rollout of video consultations in response to the pandemic, the evaluation was re-aligned. This report presents an analysis of the uptake of video consultations across secondary care settings using the nationally supported platform from 1 April 2020 to 31 March 2021. The analysis focuses on internal and external benefits to the NHS. It explores user insights to better understand the foundations on which further scale and adoption can be built going forward.

Our report also assesses the work undertaken by the NHS England and NHS Improvement national project team, using an established evidence-based assessment framework, to identify some of the most impactful and effective components of this work. These observations may provide useful insights for NHS policy makers when considering future technology enabled transformations of the scale realised in this project.

Definitions

- **Video consultation:** an appointment that takes place between a patient and a clinician or healthcare professional over video, as opposed to face-to-face or over the telephone
- **Remote consultation:** an appointment that takes place between a patient and a clinician or healthcare professional on the telephone or over video
- **The nationally supported platform or 'platform':** the video consultation platform nationally procured and funded for all NHS trusts and foundation trusts to access from 1 April 2020 to 31 March 2021 in response to the COVID-19 pandemic
- **User:** a clinician or healthcare professional registered on the nationally supported platform
  - **New user:** a clinician or healthcare professional using the platform for the first time to deliver a video consultation
  - **One-time user:** a clinician or healthcare professional who has delivered one video consultation using the platform
  - **Casual user:** a clinician or healthcare professional who has delivered between 2 and 10 video consultation using the platform
  - **Frequent user:** a clinician or healthcare professional who has delivered over 50 video consultations using the platform
  - **Monthly active user**: users who have delivered at least one consultation using the platform in any given month
- **Session:** a 'login', defined as a continuous period of video consultations delivered by a user, with no more than 90 minutes between consultations. Consultations more than 90 minutes apart are counted as separate sessions or logins.
- **Service:** the healthcare service within which a consultation is delivered; this has been used to represent specialty
  - Using the service line mapping developed by the NHS England and NHS Improvement Outpatient Transformation Analytics Team, services were assigned to each consultation based on key words and text strings used within the nationally supported platforms' waiting area names.
  - The service analysis does not represent a breakdown of all specialties and services. It is not possible to derive this from the underlying data.
  - Some consultations were assigned a service of 'Unclassified', where the mapping did not identify a service for the specific NHS trust and waiting area combination.

Limitations of data interpretation

1. The video consultation data presented in this report relates to video consultation activity on the Attend Anywhere platform only, between 1 April 2020 – 31 March 2021. It doesn't represent the full national picture of video consultation activity across all NHS secondary care settings. A number of providers are using alternative video consultation platforms or are using multiple video consultation platforms to meet local needs. NHS England and NHS Improvement do not have access to activity data for other video consultation platforms during this period.

2. The analysis does not quantify financial costs associated with switching to video consultations.

3. Remote consultations in Hospital Episode Statistics (HES) data include both telephone and video outpatient appointments. In order to make the Attend Anywhere data comparable to HES data, the Attend Anywhere data shows activity for acute and specialist trusts only, excluding mental health and community trust types.

4. Some trusts provide shared accounts used by multiple users to deliver consultations in more than one specialty. For example, 3 users from an acute trust delivered more than 1,000 consultations in multiple specialties. This limits the depth of our analysis as we are unable to follow individual user journeys. It also biases results by increasing the average number of consultations per user and the number of frequent users.

Executive summary

Principally from data extracted from the Attend Anywhere platform

Executive summary

On 6 March 2020, the National Outpatient Transformation Programme initiated a national rollout of video consultation technology and implementation support across the NHS in England as part of the overall NHS response to COVID-19. Less than 5,000 consultations in March 2020 rapidly increased to over 340,000 per month by the end of March 2021 – totalling three million annual consultations through the single nationally supported platform.

For many patients, video consultations have led to substantial benefits, saving over 530 years of travel and waiting time in physical NHS care settings. Reduced trips also mean 78 million patient travel miles saved, which have helped avoid 14,200 tonnes of greenhouse gas emissions and an estimated 50 road traffic accidents. It also helped avoid three million hours of adult patient time off work - equivalent to £108 million in terms of national economic productivity.

For hospitals, video consultations have helped to avoid potential non-COVID-19 infections caught by people attending a consultation in person and reduced usage of personal protective equipment (PPE) at a time when supplies were constrained in Spring 2020. It is also essential to consider the environmental impact of PPE. Over the past year, video consultations have helped save an estimated 11,000,000 PPE items, equivalent to 11 million shopping bags or 110 million plastic straws.

Substantial variation in the uptake of video consultation usage in the NHS means there is still a significant opportunity across secondary care settings. The benefits of video consultations to patients, service users and teams will vary, but the evidence suggests that once clinicians start using the technology, they often become sustained users. Clinicians engaged as part of this work see the technology offering a more flexible and productive way of working with huge potential to embed video consulting in redesigned clinical pathways. The possibility to innovate around patient care using video consulting also has further to go as the technology evolves.

Initial concern around the use of video consultations increasing levels of overall clinical activity, or leading to worse outcomes, do not appear to have materialised – missed attendances are lower, and readmission rates are comparable to face-to-face. While these are reasonable initial indications, more systematic research should be undertaken into patient outcomes as usage data becomes richer, and video consultations are further embedded.

While COVID-19 helped catalyse the seismic shift, video consultations were effectively scaled across NHS secondary care settings in England at comparatively low cost in new and novel ways. This evaluation found this shift was only possible due to the learnings from the national video consultation pilot that started in April 2019.

Executive summary

Several specific challenges were exposed through the pilot, such as information governance, IT implementation, and clinical booking and patient communication system adjustments. But critically, the pilot established a way of joint working between the national project team and trusts that built agency and ultimately formed a model that scaled effectively with regional resources to do so.

Challenges remain for video consultations, and some will be common for other technology-enabled transformation projects. Still, this project delivered at the height of the COVID-19 pandemic shows that the alignment of different layers of the NHS can help navigate these challenges, mainly when focused on a common shared goal and a clear path to follow.

Based on the success of the scale-up of video consultations, there are several insights for future technology transformation programmes worth emphasising. These can be summarised as:

- Use a pilot to learn critical lessons and challenges for delivery.
- Utilise procurement and funding to drive value, but delivery is the priority.
- Provide targeted capital investment to support technology.
- Remove potential barriers or disincentives to implementation, such as tariff.
- Encourage and facilitate mutually beneficial collaboration between different levels of the organisation (local, regional, national).
- Devolve technology ownership and configuration to local teams.
- Flex central improvement support to meet local teams' needs and remove barriers to delivery, such as providing central information governance support.
- Provide an opportunity for clinical involvement rather than mandate participation.

The next four pages present a summary of each key section of this report. Additional information can be accessed via this PDF version or in the electronic report.

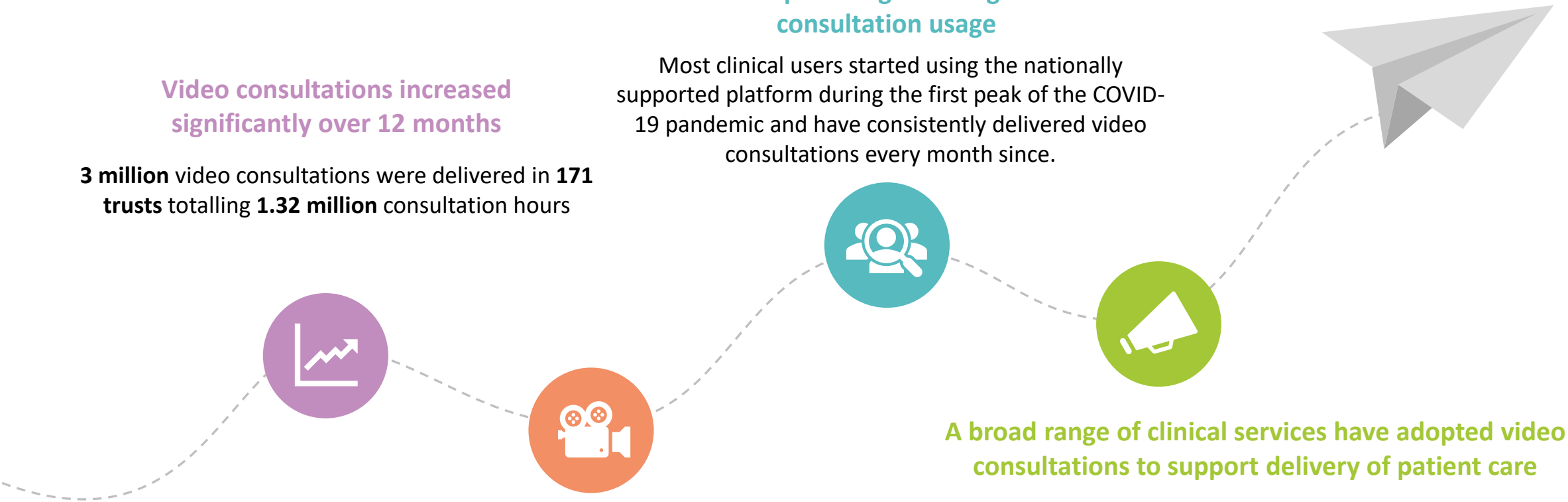
Executive summary

Video consultations increased significantly over 12 months

3 million video consultations were delivered in **171 trusts** totalling **1.32 million** consultation hours

There is still scope for significant growth of video consultation usage

Most clinical users started using the nationally supported platform during the first peak of the COVID-19 pandemic and have consistently delivered video consultations every month since.



All sub-sectors of secondary care have realised significant uptake of video consultations

Mental health and **community** consultations are **significantly longer in duration** than both acute and specialist consultations. This reflects the varying nature of care delivered in these distinct settings.

A broad range of clinical services have adopted video consultations to support delivery of patient care

Uptake has been significant in unexpected areas such as **ophthalmology** and **physiotherapy** as well as services such as **talking therapies** where video consulting has a more obvious application.

Executive summary

Improved patient flow

Avoided **3 million** physical attendances and **35,000** Emergency Department (ED) visits.

Reduced infection risks

Avoided **1,730** potential hospital acquired infections, excluding all potential COVID-19 infections.

Fewer missed appointments

Saved **£6m** as a result of the reduction in **missed appointments** compared to face-to-face appointments.

Reduced waiting time for patients

Saved patients **2.25 million** hours of waiting time in total, with almost **99,000** hours saved in urgent and emergency care settings.

Reduced costs from avoided PPE

Avoided **£1.14m** in costs as a result of the reduction in PPE usage.

Executive summary

Time savings

Video consultations helped patients to save **530 years** of **travel** and **waiting time** for appointments.

Environmental benefits

More than **14,200 tonnes** of greenhouse gas emissions and **46 tonnes** of PPE have been avoided.

Economic benefits

3 million work hours saved and up to **£108m in labour productivity gains** as a result of reduced adult patient time spent travelling to and from a face-to-face appointment and waiting for appointments.

Travel cost savings

£40m saved in **patient travel costs** from reduced travel and car parking expenses avoided.

Executive summary

Drivers of increased activity

Core users are largely responsible for driving **increased activity** levels.

Clinical user types

Initial analysis suggests three distinct video consultation **clinical user groups** in secondary care settings.

User acquisition

Number of **active clinical users** increased substantially in April, May and June 2020 and then continued to **grow steadily** until January 2021.

Executive summary

Section 5

The national pilot

The successful rollout of video consultations in secondary care was influenced by the experience and learnings from the pilot underway when the pandemic emerged. A well-designed pilot with solid collaboration can help identify the complexities of scaling and provide a manageable environment to test interventions to solve or mitigate these complexities.

The delivery approach

COVID-19 required an accelerated plan to roll out video consultation capability in secondary care rapidly. The underlying approach of the national team focusing on a small set of enabling interventions, coupled with an aligned network of regional resources, was practical in helping trusts quickly access and implement video consultation technology for patient care.

Project complexities and recommendations

The rapid growth of video consultations in NHS secondary care resulted in several unforeseen complexities, such as platform outages. Similar future technology enabled projects should ensure unforeseen events are used to continually improve the support offer provided. This should always be coupled with an effective and open communications approach.

Section 1: Uptake of video consultations in secondary care

Principally from data extracted from the Attend Anywhere platform

Uptake of video consultations in secondary care

Video consultations increased significantly over 12 months

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There is still scope for significant growth of video consultation usage

Most clinical users started using the nationally supported platform during the first peak of the COVID-19 pandemic and have consistently delivered video consultations every month since.

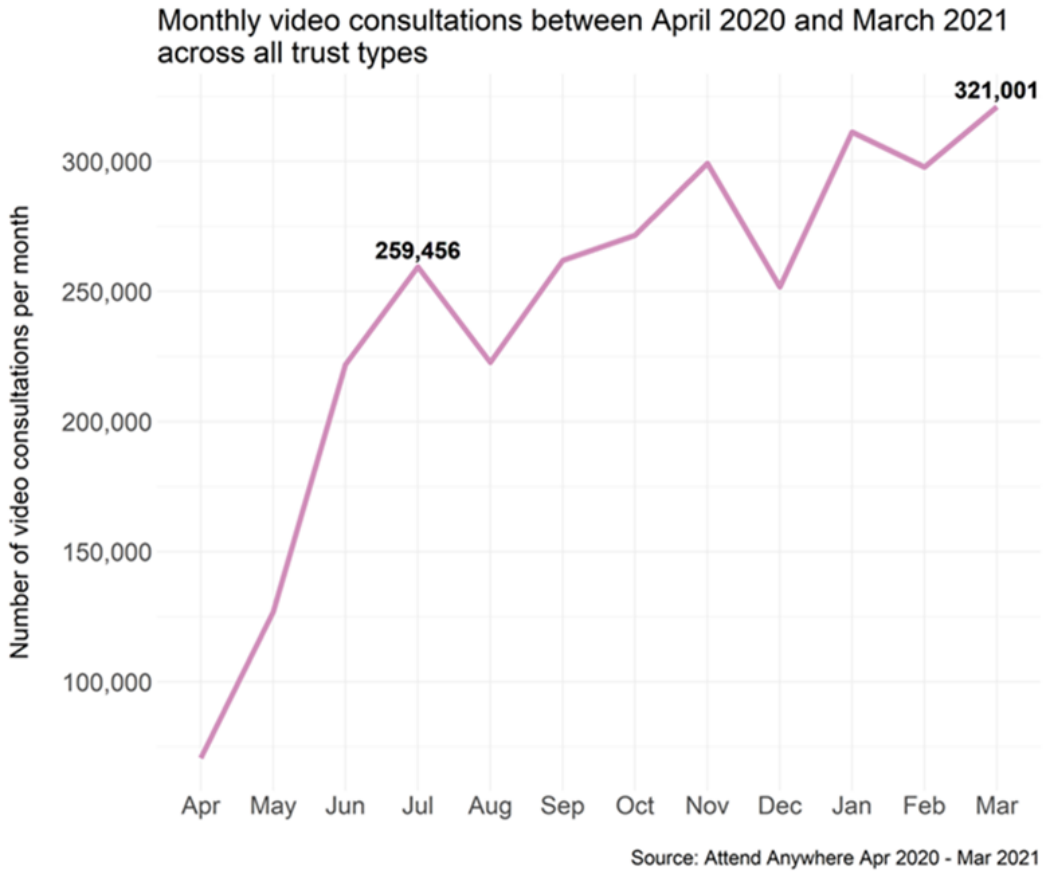
All sub-sectors of secondary care have realised significant uptake of video consultations

Mental health and **community** consultations are **significantly longer in duration** than both acute and specialist consultations. This reflects the varying nature of care delivered in these distinct settings.

A broad range of clinical services have adopted video consultations to support delivery of patient care

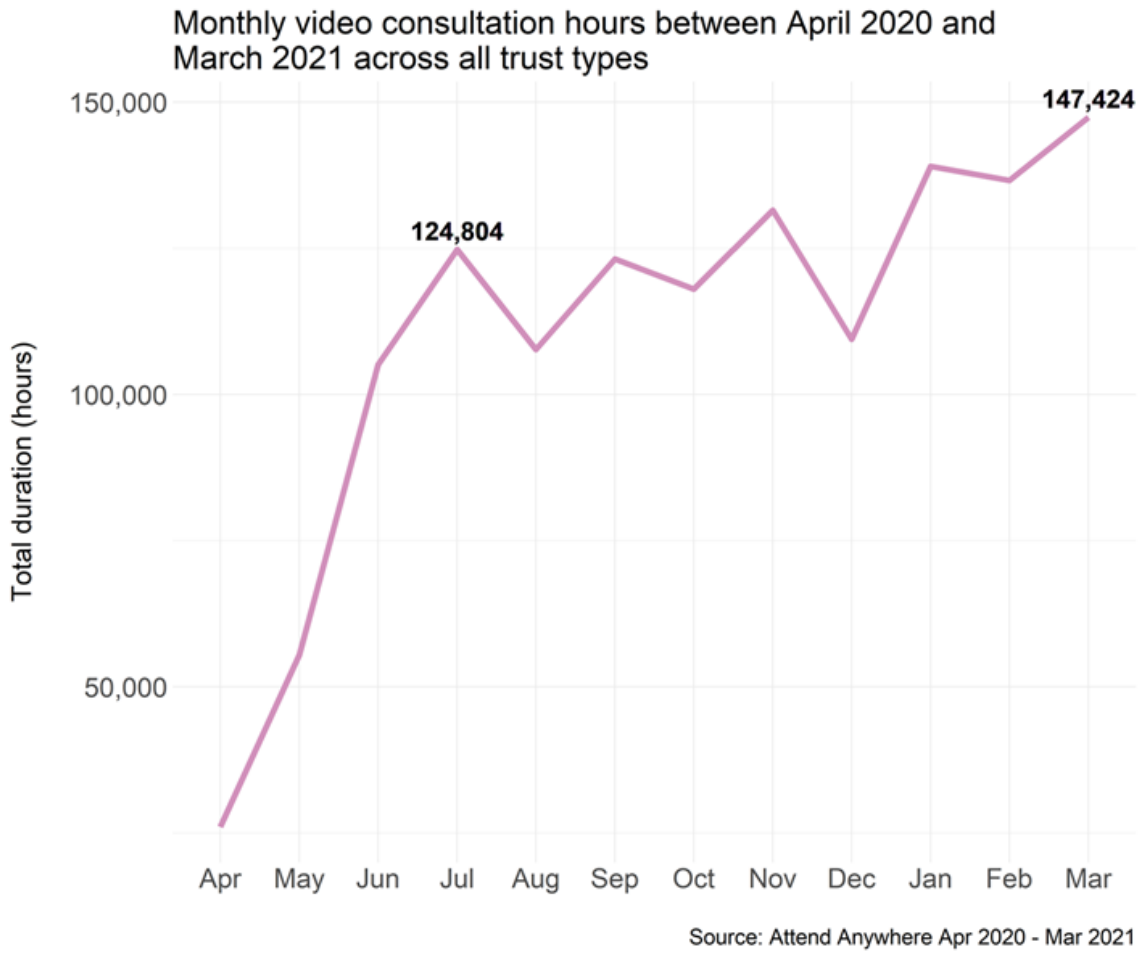
Uptake has been significant in unexpected areas such as **ophthalmology** and **physiotherapy** as well as services such as **talking therapies** where video consulting has a more obvious application.

Since April 2020, daily video consultations have increased substantially



- Month-on-month activity grew consistently from July 2020, following significant uptake from April to June.
- Daily video consultations peaked in early February 2021 during the third national lockdown, with over 19,000 video consultations per day. This activity represents more than a 6-fold increase from April 2020 volumes, where between 2,000 and 3,000 video consultations were delivered per day.

Hours of patient care delivered using video consultations has exceeded 100,000 hours each month since June 202

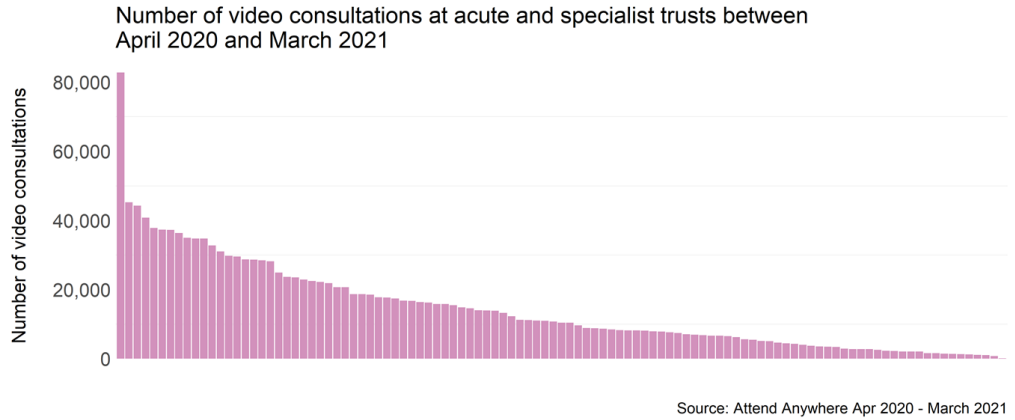


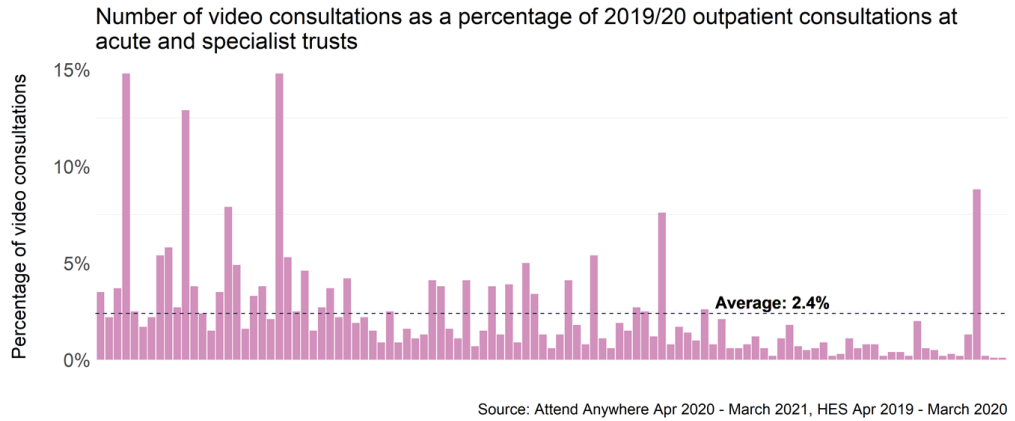
- Hours of patient care delivered each month has grown in line with the monthly growth in video consultation appointments, peaking at 147,000 hours in March 2021.

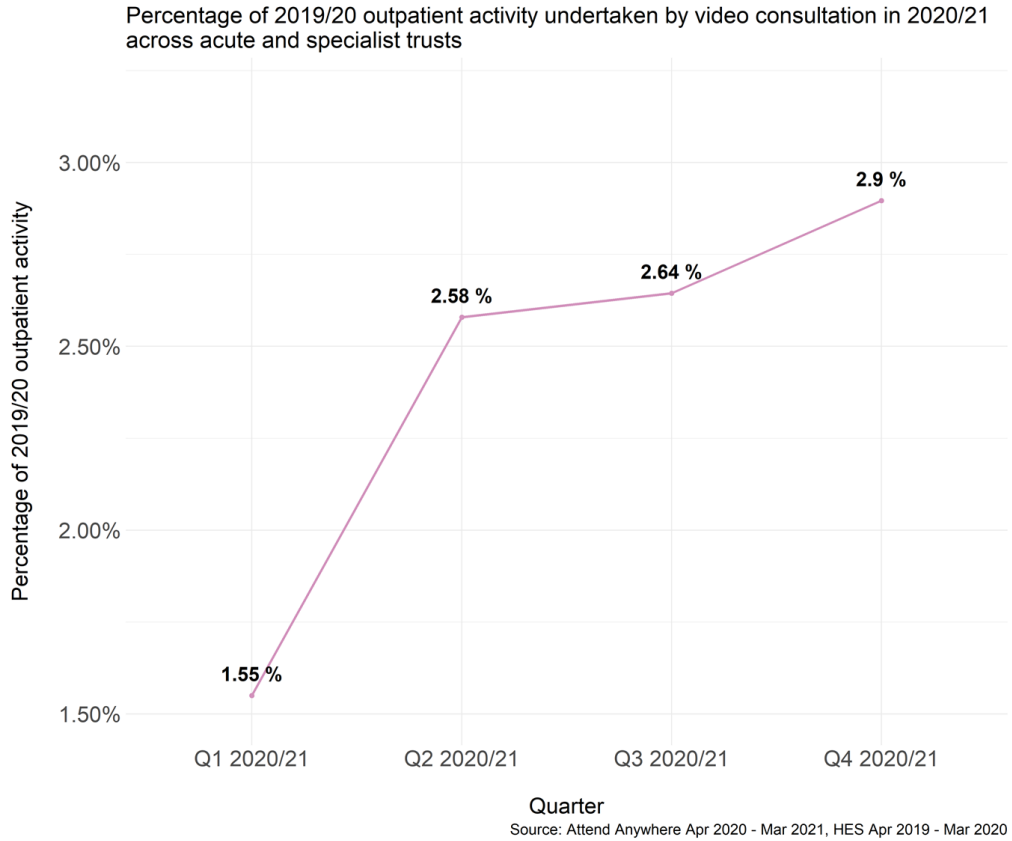
- Daily consultation hours peaked in early February 2021 during the third national lockdown. Clinical users in the NHS spent up to 8,700 hours per day on the platform, seeing patients for a total of 1.3 million cumulative consultation hours. This clinical time equates annually to 679 clinicians working full time[1], undertaking entirely patient video consultations.

1. *Assuming 37.5 hours per week. Source: NHS, https://www.nhs.uk/Scorecard/Pages/IndicatorFacts.aspx?MetricId=100060*

Acute and specialist trusts now deliver on average 1 in 35 outpatient consultations via video



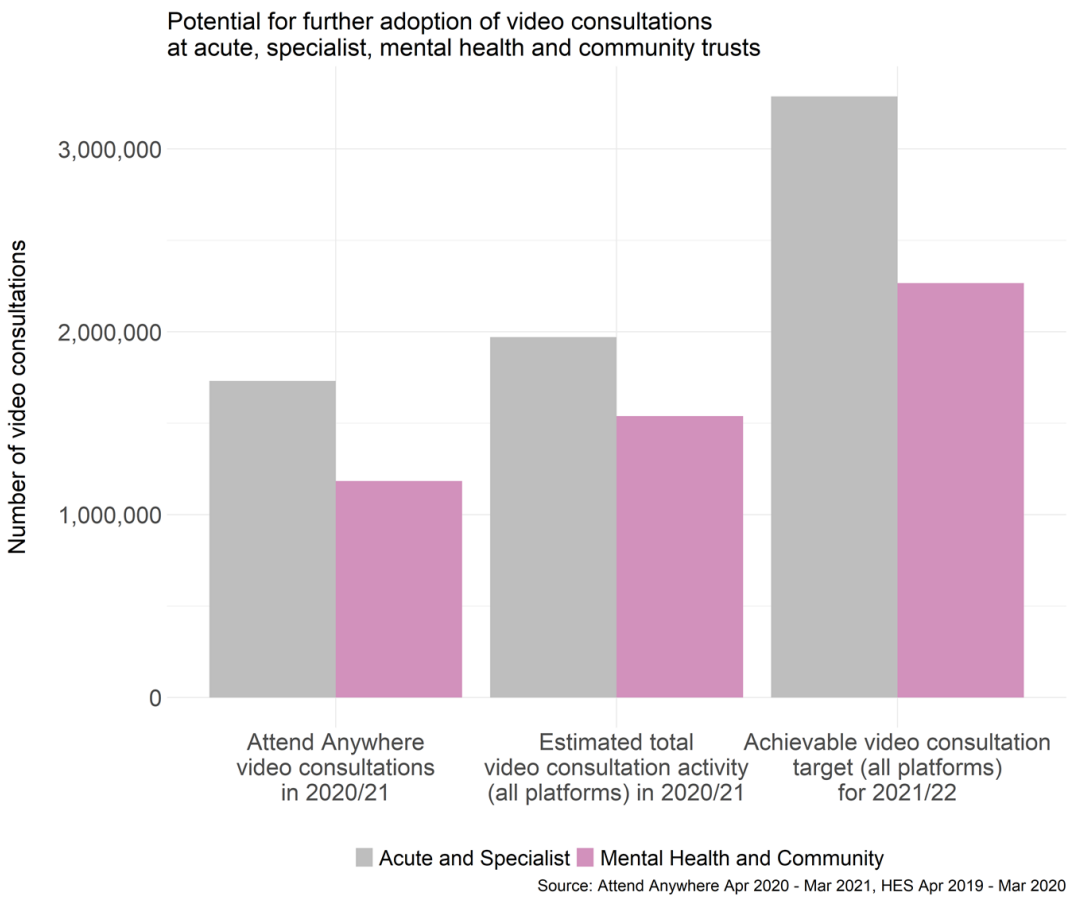




- Across acute and specialist trusts, on average **2.4% of outpatient activity** has been delivered via video in 2020/21.
- The **rate of outpatient activity** delivered via video **nearly doubled** during 2020/21: 1.5% in Q1 compared to 2.9% in Q4.

Note: Excluding mental health and community trust types. HES data for 2019/20 was used as a benchmark of pre-pandemic outpatient activity, assuming no change in overall outpatient activity in 2020/2021.

There is significant scope for further adoption of video consultations in acute, mental health and community settings



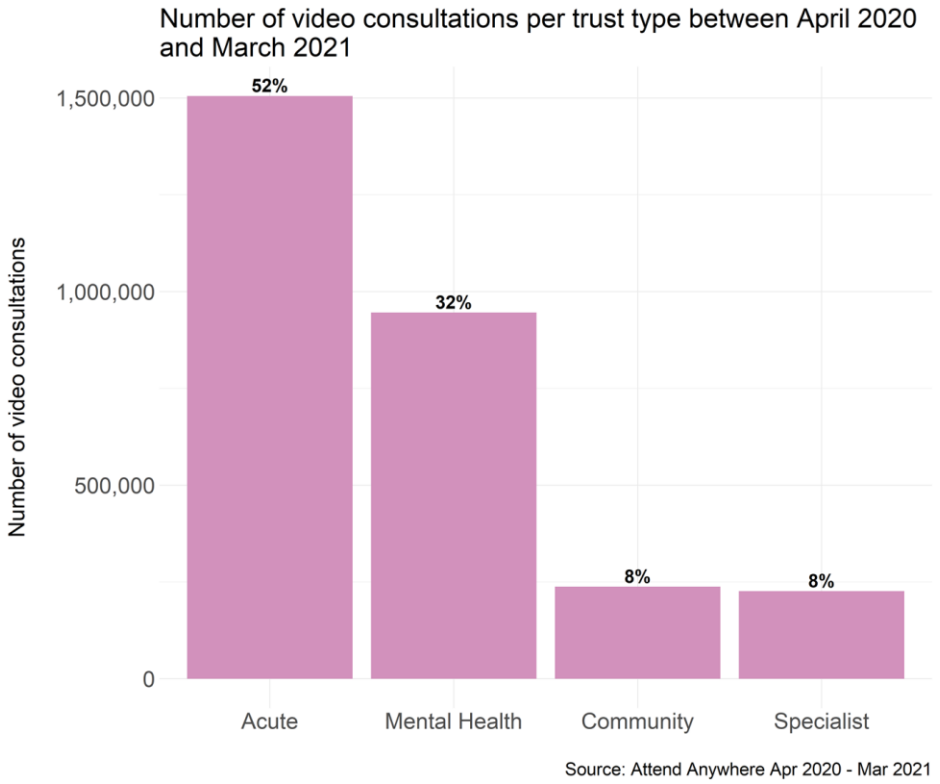
- If all acute and specialist trusts achieved at least the upper quartile of take-up (3.12% of outpatient activity), 3.3m consultations could be delivered via video in 2021/22 across all platforms[1], the equivalent of 95 video consultations per day[2] for the average acute or specialist trust.

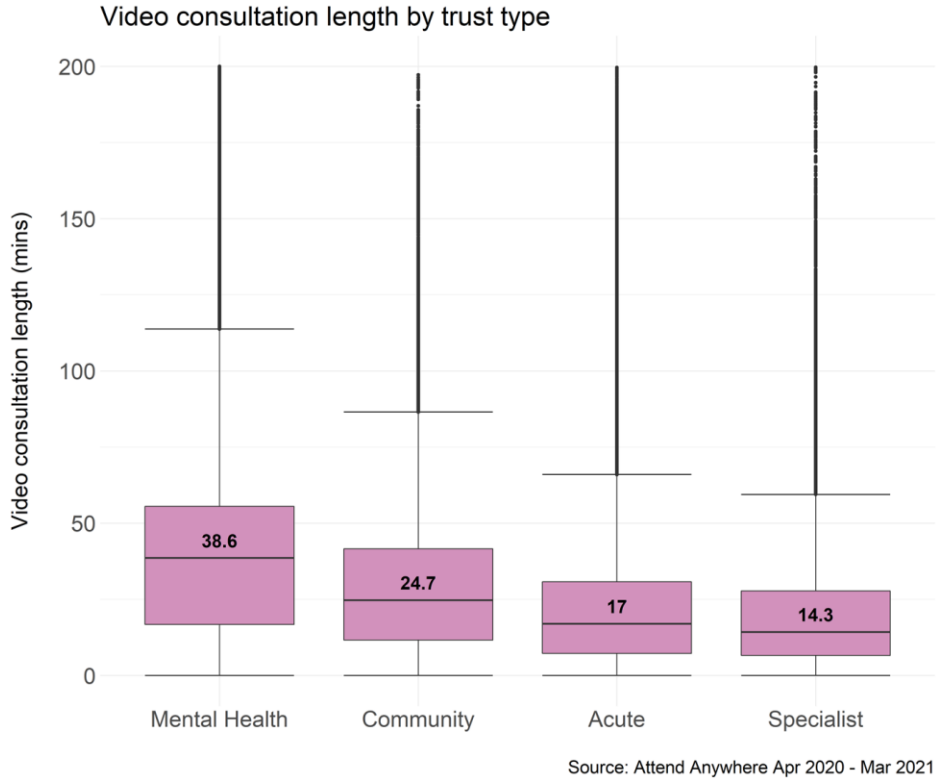
- If all mental health and community trusts delivered at least the upper quartile of activity via video (nearly 31,000 video consultations), 2.3m consultations could be delivered via video in 2021/22 across all platforms[1], or 138 daily video consultations[2] for the average mental health and community trust.

Note: For more detail on methodology for estimating total video consultation activity and achievable video consultation targets, see Appendix A.

1. *Assuming that trusts using Attend Anywhere don't use alternative video consultation platforms and excluding group consultations.*
2. *Excluding weekends and bank holidays.*

Activity varies by trust type



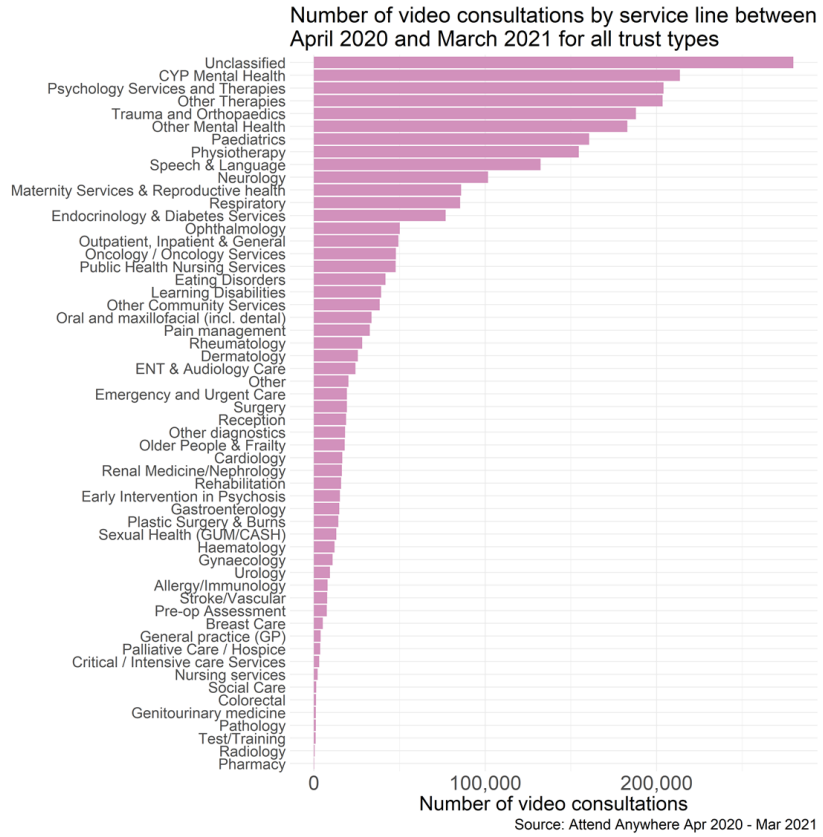


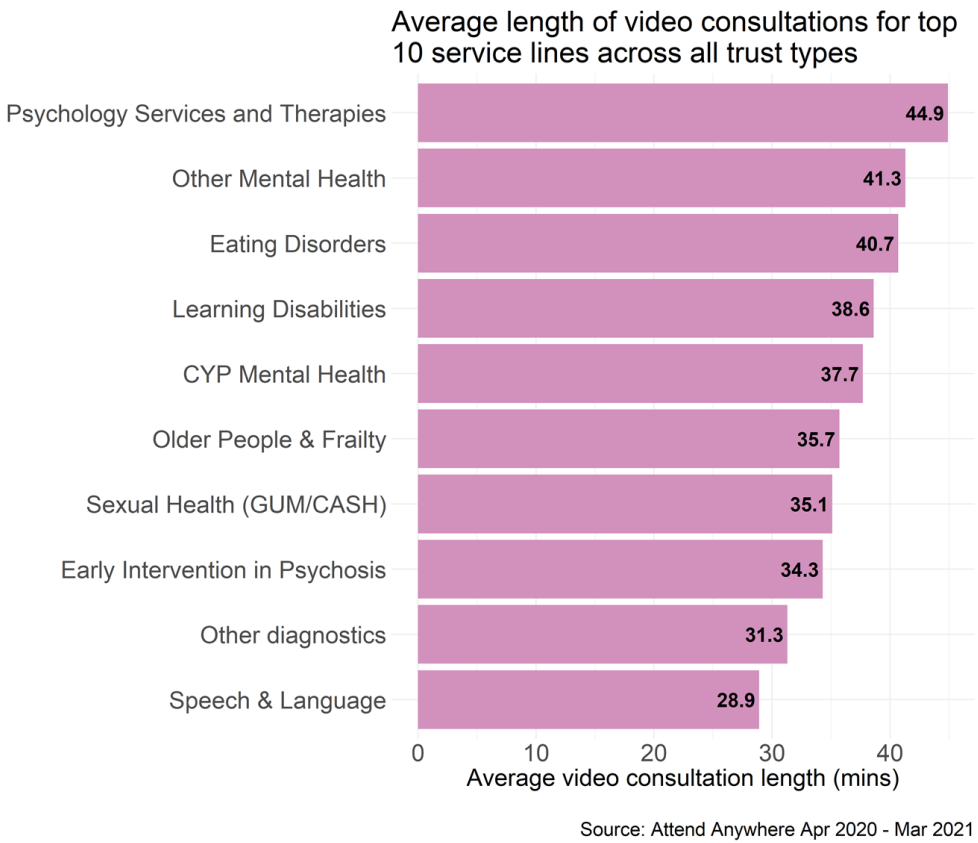
- Mental health trusts make up one third of total activity, but 45% of total consultation time recorded in the 12-month period. While acute trusts make up more than half of total activity but 41% of total consultation time.

- Consultation length varies significantly between trust types, with mental health trusts (median of 39 minutes) and community trusts (median of 25 minutes) having longer consultations than acute and specialist trusts.

Note: the above box plot displays the distribution of consultation length by trust type. The black lines at the top represent outliers, i.e. consultations that were longer than the third quartile (75th percentile) value.

Activity varies by service, suggesting significant opportunities for growth





- The volume of video consultations varies greatly between services. Talking therapies[1] such as rehabilitation, psychology and mental health services have the largest volumes, suggesting that video is particularly suited to this type of consultation.
- Talking therapies also have the longest video consultations compared to other services (average of 27 minutes).

Note: The service analysis does not represent a breakdown of all specialties and services. For more information, please see the *data definitions.*

1. *A medical specialty in which the consultation involves only talking (no examination), such as mental health and psychology specialties*

Section 2: Internal benefits realised of video consultation adoption

Principally from data extracted from the Attend Anywhere platform

Internal benefits realised of video consultation adoption

Improved patient flow

Avoided **3 million** physical attendances and **35,000** Emergency Department (ED) visits.

Reduced infection risks

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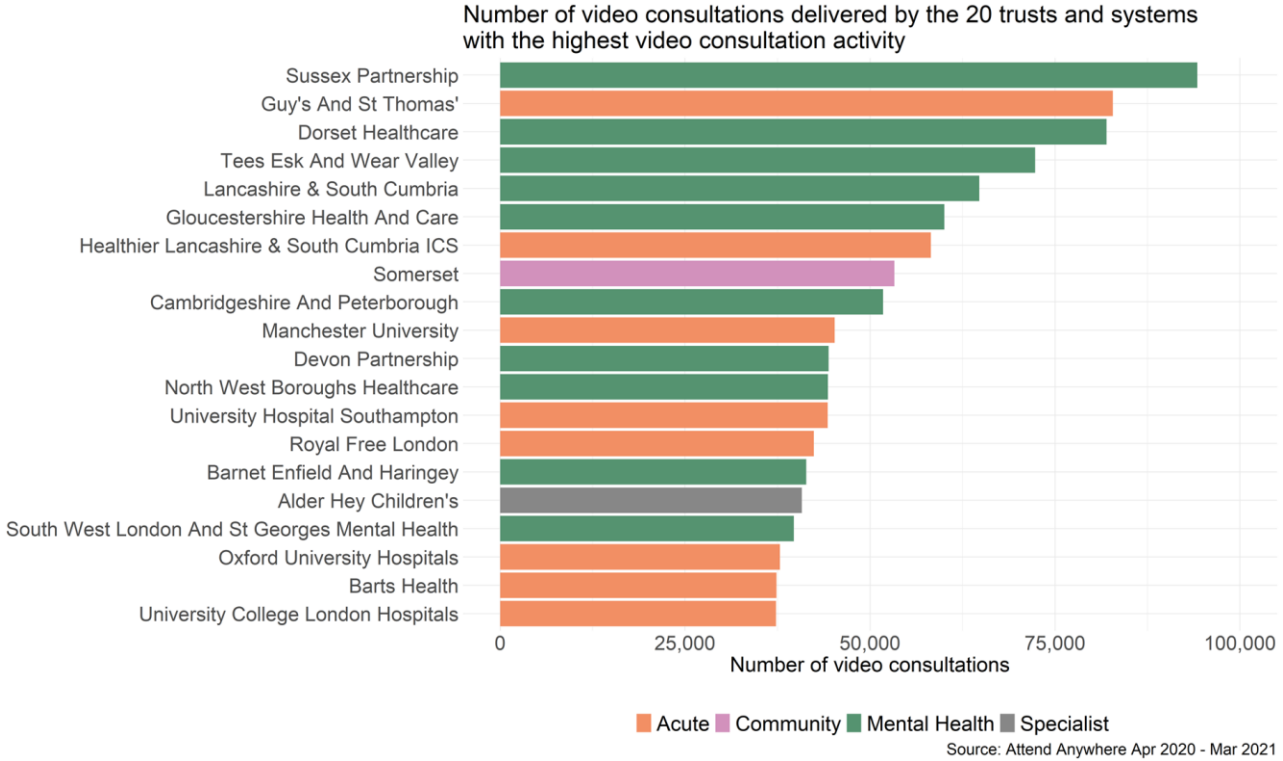
Reduced costs from avoided PPE

Avoided **£1.14m** in costs as a result of the reduction in PPE usage

Video consultations have led to substantial reductions in physical attendances



- A total of almost 3 million in-person consultations were avoided between April 2020 and March 2021 through the use of video consultations on the nationally supported platform.

- The 20 trusts and systems with greatest use of the nationally supported platform collectively delivered over 1 million video consultations between April 2020 and March 2021. This corresponds to an average of over 4,000 in-person attendances avoided per trust per month.

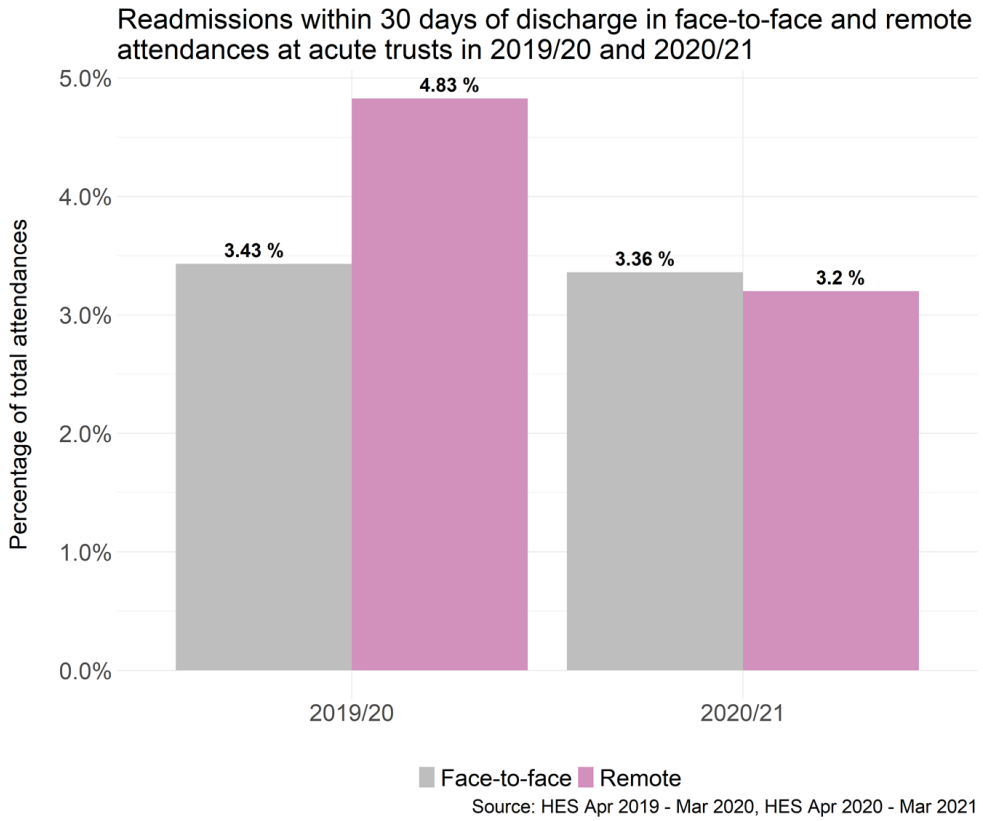
Emergency care is an area of significant opportunity for video consulting

- Between April 2020 and March 2021, nearly 35,000 Emergency Department (ED) consultations were delivered by video on the nationally supported platform in 39 trusts.
- The reduction in unnecessary ED visits may alleviate pressure on emergency departments, reduce emergency waiting times, and reduce the risk of spreading hospital-acquired infections.
- While the data available regarding ED usage is limited, patients waited on average less than 4 minutes in virtual ED waiting areas using the nationally supported platform. This compares to 174 minutes in hospital[1]. It is also estimated that almost 99,000 hours of patient time were saved in urgent and emergency care settings in 2020/21.
- If only 5% of 2019/20 ED attendances were re-directed to a video consulting service, and 50% of those did not result in a subsequent attendance, over 1 million hours of patient waiting time could be saved, reducing pressure on ED staff and hospital infrastructure.

Note: ED defined as any appointment within a waiting area named "Accident", "Emergency", "ED", "Out of hours" or "Urgent Care", or with a trust type named "Ambulance".

1. *A&E waiting times, 2020, Nuffield trust*

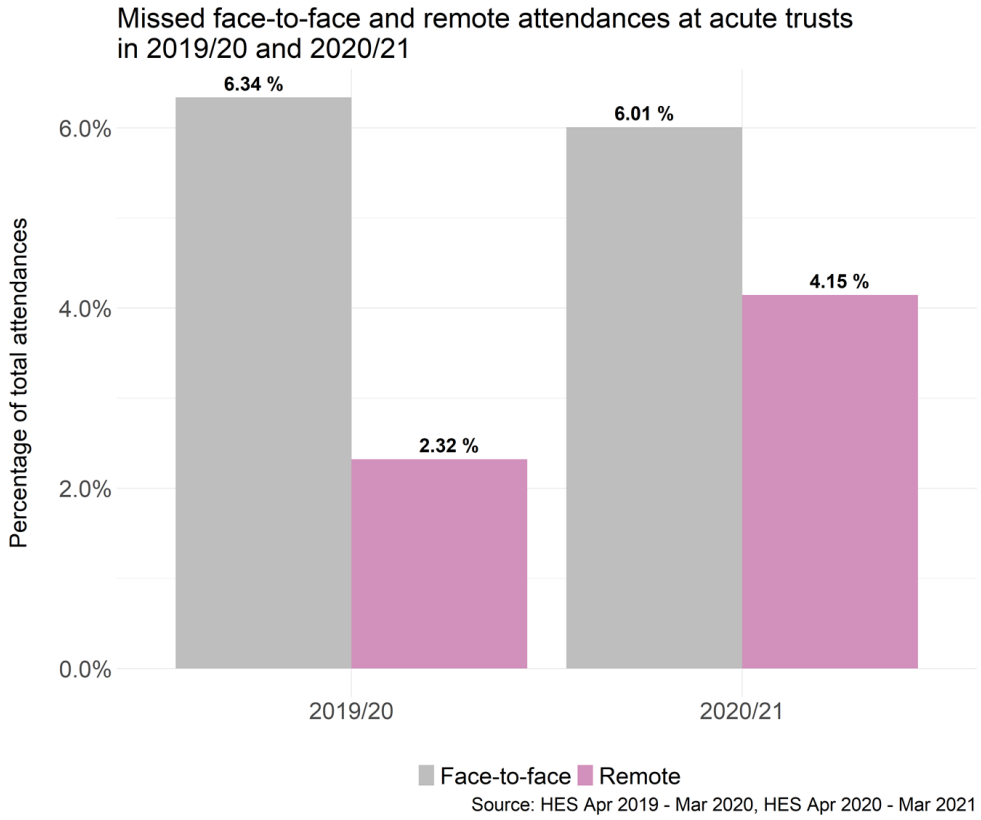
Outpatient remote attendances have similar readmission rates to face-to-face care



- 2019/20 data suggest that remote outpatient attendances had a notably higher re-admission rate than face-to-face attendances (4.83% vs 3.43%).
- Despite the pace and scale of outpatient video consultation adoption, readmission rates have reduced significantly and are now comparable to face-to-face.
- While this is a useful proxy indicator for outcomes, further exploration and research into this area should form part of future analysis to establish a richer understanding of remote care outcomes.

Note: Remote appointments in HES include telephone and video consultations, for acute and specialist trusts only.

Fewer cancellations and DNAs for remote consultations than for face-to-face appointments

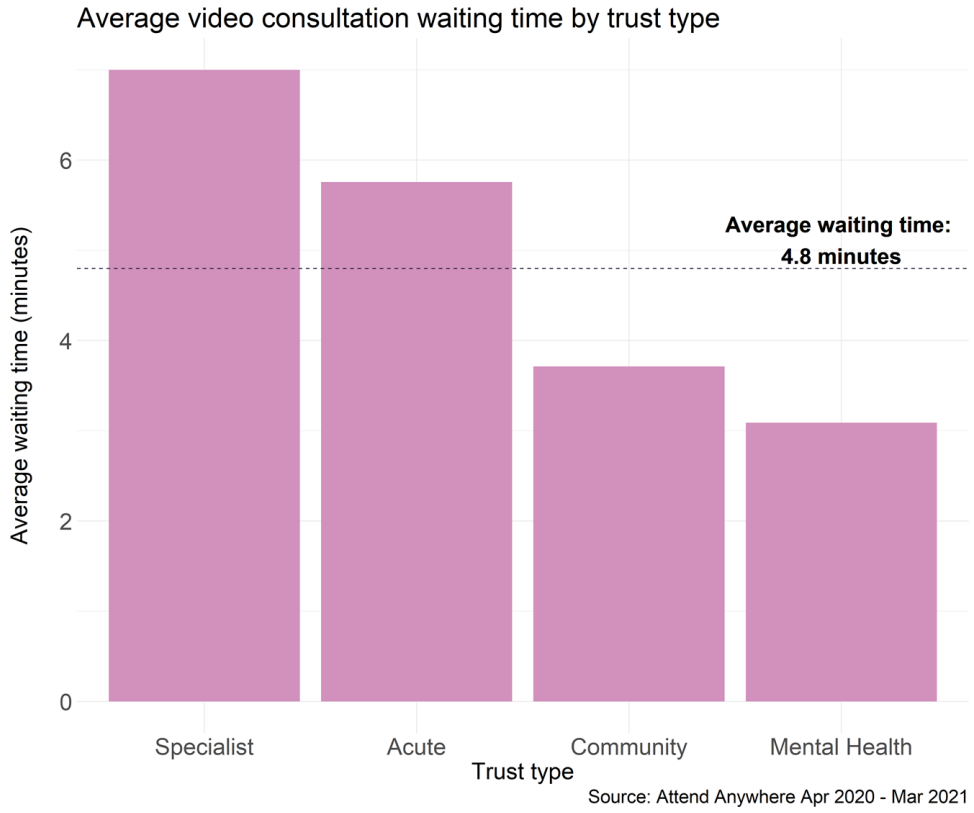


- Patient cancellations and missed attendances (DNAs) have a big impact on the NHS in terms of utilisation and wasted resources.
- While 6% of face-to-face outpatient appointments resulted in a missed attendance by patients between April 2020 and March 2021, only 4% of remote attendances were missed – resulting in nearly 55,800 missed attendances avoided due to use of video consultations.
- It is estimated that the average cost of a missed outpatient appointment is £108[1]. For the 55,800 missed attendances avoided as a result of video consultations, this corresponds to a saving of over £6 million for the NHS.

Note: Remote appointments in HES include telephone and video consultations, for acute and specialist trusts only.

1. *Outpatient clinics: a guide to good practice, 2017, Royal College of Surgeons*

Video consultations have contributed to a 10-fold reduction in the time patients wait immediately before an appointment



- The waiting period can be a difficult and stressful part of any appointment. On average, patients wait over 50 minutes in hospital before seeing their doctor for a consultation[1] or 135 minutes in the emergency department[2].
- This compares to an average wait time of under 5 minutes for a video consultation. This represents a reduction of more than 90%, which has helped avoid over 2.25 million hours of waiting for patients in 2020/21.

Note: The waiting time for a video consultation is calculated as the difference between the patient/service user's entry time and the time the call is answered by a clinician.

1. *The Potential Economic Impact of Virtual Outpatient Appointments in the West Midlands, 2018, The Strategy Unit*
2. *A&E waiting times, 2020, Nuffield trust*

Fewer patients in hospital reduces the risk of healthcare associated infections

- Pre-COVID-19, healthcare-associated infections (HCAIs) were estimated to affect over 300,000 patients, and cost the NHS up to £1 billion a year[1] - approximately £3,300 per patient. A study of HCAIs in NHS hospitals estimated that the probability of an inpatient acquiring an HCAI is around 4.7%[2].

- The risk of an HCAI is lower for an outpatient, but this risk has increased with the recent growth in outpatient care (including growth in complex procedures delivered as an outpatient), larger numbers of social contacts and patient encounters, and fewer infection-prevention practices and resources[3].

- Taking a conservative infection rate of 0.1% for outpatients (nearly 50 times lower than for inpatients), it is estimated that 1,730 potential HCAIs were avoided due to video consultations at acute and specialist trusts between April 2020 and March 2021, resulting in £5.7 million in cost savings. These figures are based on pre-COVID-19 levels and do not include data on COVID-19 infections or the impact of the more stringent infection prevention control measures adopted during this period.

1.73 million video attendances at acute and specialist trusts × **0.1%** = **1,730 potential HCAIs avoided** × **£3,300** = **£ 5.7m in costs savings**

1. *Healthcare-associated infections: prevention and control in primary and community care, 2017, NICE*
2. *Modelling the annual NHS costs and outcomes attributable to HCAIs in England, 2019, BMJ*
3. *Outbreaks and Patient Notifications in Outpatient Settings, Selected Examples, 2010–2014, CDC*

Video consultations have reduced trust costs from avoided PPE

- For each face-to-face visit, clinicians will use:

Face mask
Worn continuously until break
Assume same item used for 3 patients

Gown/Apron
Minimum 1 per patient
Assume 1 per patient

Gloves
Minimum 1 per patient
Assume 2 per patient

Face shield
Worn continuously until break
Assume same item used for 3 patients

- Prices of personal protective equipment (PPE) varied significantly throughout 2020, with costs surging dramatically during the initial peak of the pandemic. It is estimated that between April and June 2020 video consultations helped trusts save over £380,000 in costs from avoided PPE.

- While the cost of most items has fallen by 6 to 10 times since the beginning of the pandemic, video consultations delivered between July 2020 and March 2021 resulted in nearly £760,000 in costs savings and a total of £1.14m of reduced costs from PPE avoided for the full year 2020/21.

Note: Assumptions and methodology can be found in Appendix B.

Case study: use of video consulting in a specialist trust's emergency department

- A specialist trust in London delivered over 24,300 Emergency Department video consultations between April 2020 and March 2021. This represents 25% of the trust's total Emergency Department activity in 2019/20.

- This delivered three key benefits:

Reduced waiting times	Avoided in-person attendances	Reduced cost
The average (mean) patient wait time in the Emergency Department waiting area was 6 minutes, compared to over 2 hours in hospital[1]. Across 24,300 video consultations, over 46,000 hours of patient time were saved.	Nearly 80% of Emergency Department patients did not need an in-hospital review following their video consultation[1]. This represents 19,440 in-hospital attendances avoided.	A typical Emergency Department attendance at the specialist trust costs approximately £180, compared to just £73 for a video consultation[1]. Across 24,300 video consultations, this amounts to savings of over £2.6 million.

1. *Creating the Moorfields virtual eye casualty, 2020, BMJ*

Case study: internal efficiency and productivity impact from video consultations at a large acute London trust

Improved patient flow

Avoided **6,900** hospital attendances per month.

Reduced infection risks

Avoided **over 80** potential hospital acquired infections (excluding COVID-19 infections).

Fewer missed appointments

Saved **over £187,000** as a result of the reduction in **missed appointments** compared to face-to-face appointments.

Reduced waiting time for patients

Saved patients **62,000 hours** of waiting time, with almost **14,000 hours** saved in emergency and urgent care settings.

Reduced costs from avoided PPE

Avoided **over £36,000** in costs as a result of the reduction in **PPE** usage.

Case study: internal efficiency and productivity impact from video consultations at a large mental health trust in the North East and Yorkshire

Improved patient flow

Avoided **6,000** hospital attendances per month.

Reduced infection risks

Data not available.

Fewer missed appointments

Saved **over £164,000** as a result of the reduction in **missed appointments** compared to face-to-face appointments.

Reduced waiting time for patients

Saved patients nearly **55,000 hours** of waiting time in total.

Reduced costs from avoided PPE

Avoided **over £31,000** in costs as a result of the reduction in **PPE** usage.

Section 3: External benefits realised of video consultation adoption

Principally from data extracted from the Attend Anywhere platform

External benefits realised of video consultation adoption

Time savings

Video consultations helped patients to save **530 years** of **travel** and **waiting time** for appointments.

Environmental benefits

More than **14,200 tonnes** of greenhouse gas emissions and **46 tonnes** of PPE have been avoided.

Economic benefits

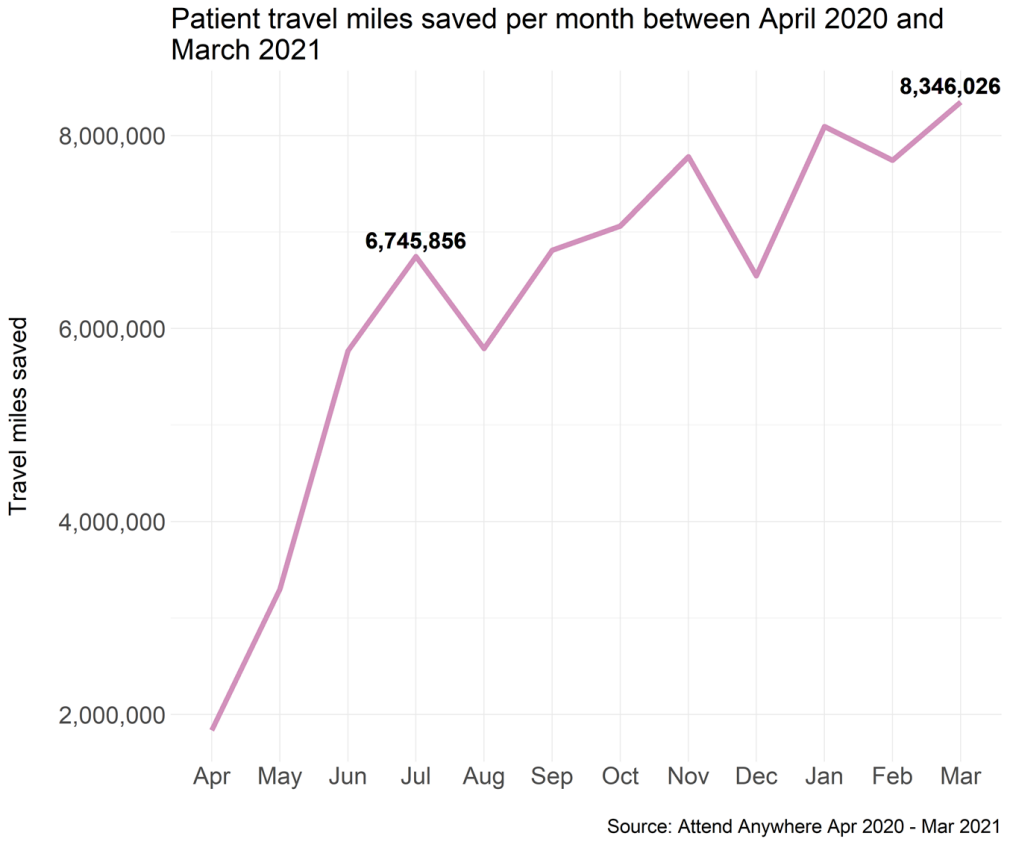
3 million work hours saved and up to **£108m in labour productivity gains** as a result of reduced adult patient time spent travelling to and from a face-to-face appointment and waiting for appointments.

Travel cost savings

£40m saved in **patient travel costs** from reduced travel and car parking expenses avoided.

78 million miles of patient travel have been saved and 50 road traffic accidents avoided

- It is estimated that the NHS accounts for 5% of all road traffic in England, causing increased pollution and road traffic accidents.
- The average return journey to a hospital for a patient living in England is 26 miles[1]. For 3 million video consultations, this would help save 78 million miles of travel for patients – the equivalent of 3,132 round the world trips.
- In 2020/21, reducing patient journeys through use of video consultations may have helped to avoid six serious and 44 minor car or motorcycle injuries. This saving equates to over £2.6m in avoided road traffic accident-related costs[1] for patient travel alone.



Note: It is recognised that clinicians and healthcare professionals would also greatly benefit from avoided travel. Due to the complexity and limited data available around NHS staff travel, it has been not considered in this analysis.

1. *Assumptions and methodology developed by the NHS England and NHS Improvement Outpatient Transformation Programme. Distance to care contact data held in SUS.*

In 2020-2021, video consultations helped patients to save 530 years of travel and in-hospital waiting time

- Outpatient consultations generally involve a short face-to-face appointment with a clinician (around 20 minutes[1]). However, the total time spent by patients travelling to an NHS site and waiting for their appointment is generally far higher.

- Given that the average journey to a face-to-face appointment for a patient living in England is 24 minutes each way[2], video consultations have resulted in more than 140 million patient minutes saved in travel time alone.

3 million video consultations × **24 minutes drive** × **2 trips** = **144m patient minutes saved from avoided travel**

- In addition, considering the waiting time for a face-to-face appointment tends to be 45 minutes higher compared to video consultations[3], total patient time saved increases to over 271 million minutes, the equivalent of 530 years.

3 million video consultations × **45 minutes of waiting time avoided** = **135 million minutes saved**

1. *The Potential Economic Impact of Virtual Outpatient Appointments in the West Midlands: A scoping study, 2012, The Strategy Unit*
2. *Assumptions and methodology developed by the NHS England and NHS Improvement Outpatient Transformation Programme team. Taken from the Journey Time Statistics publications, 2017, Department for Transport*
3. *Average waiting time for a video consultation of under 5 minutes; average waiting time for a face-to-face consultation of over 50 minutes (slide 29)*

Reduced travel and car parking expenses have saved patients £40 million

- The average cost of all types of return journey (car, bus, train or taxi) to a face-to-face appointment for a patient living in England is £12.59 per appointment[1]. Across 3 million video consultations, patients have saved an estimated £37.8 million on travel costs.

- For those patients travelling to their appointment by car, the majority would also be subject to car parking charges. Avoiding these parking charges will have saved patients an estimated £2.8 million in 2020/21.

£37.8 million saved on patient travel + **£2.8 million saved on patient parking** = **£40.6 million saved on patient travel costs**

- Whilst patients clearly make savings with respect to avoided travel, the shift to video consultations will mean that NHS trusts will lose revenues from car parking and in other areas such as on-site retail concessions (e.g. coffee shops).

1. *Dixon et. Al, 2018, Cost-Consequence Analysis Alongside a Randomised Controlled Trial of Hospital Versus Telephone Follow-Up after Treatment for Endometrial Cancer*
    - *Note: Travel costs for 2016 (£11.47) adjusted to 2019 costs based on Bank of England inflation rates (3.2% average inflation per year).*

Note: Assumptions and methodology can be found in Appendix D.

Video consultations have reduced greenhouse gas emissions by 14,200 tonnes

- Reduced patient travel dramatically benefits the environment by reducing the NHS' carbon footprint. The table below reflects greenhouse gas (GHG) emissions for 3 million patient return journeys to NHS sites (the total number of video consultations on the nationally supported platform between April 2020 and March 2021) using different modes of transport.

Mode of transport	Miles travelled by patients	GHG emissions, t
Diesel car	34,319,850	7,487
Petrol car	28,476,830	6,532
Electric car	621,074	44
Motorcycle	298,305	57
Bus	10,068,878	81
Train	2,752,206	10
Total	**76,537,143**	**14,212**

- Video consultations saved a total of 14,212 tonnes of GHG emissions. It would take 7,470 hectares of forest a year, the equivalent of over 12,000 football fields in surface area, to capture that amount of CO2.
- Lower emissions may also have positive externalities over time, such as improved population health.

Note: Estimates do not consider saved clinician and healthcare professional travel, and exclude patients walking, cycling or using other private modes of transport. For the breakdown of patient miles travelled by mode of transport, see Appendix C.

1. *Assumptions and methodology developed by the NHS England and NHS Improvement Outpatient Transformation Programme team.*

Video consultations have had a positive environmental impact from avoided personal protective equipment

- For each face-to-face visit, clinicians will use:

Face mask
Worn continuously until break
Assume same item used for 3 patients

Est. weight: 3.5 gr/item

Gown/Apron
Minimum 1 per patient
Assume 1 per patient

Est. weight: 3.9 gr/item

Gloves
Minimum 1 per patient
Assume 2 per patient

Est. weight: 4.5 gr/pair

Face shield
Worn continuously until break
Assume same item used for 3 patients

Est. weight: 4.4 gr/item

- Across 3 million video consultations, a total of 11,000,000 items of personal protective equipment (PPE) were saved from going to landfill. This equates to over 46 tonnes of PPE – the equivalent of more than ten African elephants in weight or 110 million plastic straws.

- For one large acute trust alone, across 82,827 video consultations, over 300,000 items of PPE were saved, equating to almost 1.3 tonnes of PPE.

Note: Assumptions and methodology can be found in Appendix B.

Fewer lost workdays for adult patients may have saved £108 million in productivity

- Adult patients attending a face-to-face appointment often need to take time off work to travel, wait for and attend their appointment. An average patient spends an additional 93 minutes attending a face-to-face consultation compared to a video consultation.

- Across 2.8 million adult video consultations, this amounts to 4.4 million hours of adult patient time saved. This equates to nearly 3 million work hours saved, which is worth an estimated £108 million in labour productivity gains.

Note: these figures would increase when considering family members joining patient appointments (e.g. parents attending their child's appointment).

Assumptions and methodology can be found in Appendix E.

Case study: external efficiencies from video consultations at a medium acute trust in the South East

Time savings

770,000 miles and **over 23,500 hours of travel** saved for patients from shifting to video consultations.

Environmental benefits

Up to **140 tonnes** of greenhouse gas emissions and **460 kg** of PPE have been avoided.

Economic benefits

30,000 work hours saved and **£1.1 million in labour productivity gains** as a result of reduced patient travel and waiting time.

Travel cost savings

£400,000 saved in **patient travel costs** from reduced travel and car parking expenses avoided.

Case study: external efficiencies from video consultations at a large community trust in the South West

Time savings

1.4 million miles and **over 42,500 hours of travel** saved for patients from shifting to video consultations.

Environmental benefits

Up to **252 tonnes** of greenhouse gas emissions and **900 kg** of PPE have been avoided.

Economic benefits

55,000 work hours saved and **£2 million in labour productivity gains** as a result of reduced patient travel and waiting time.

Travel cost savings

£720,000 saved in **patient travel costs** from reduced travel and car parking expenses avoided.

Section 4: User analysis of video consultation adoption

Principally from data extracted from the Attend Anywhere platform

User analysis of video consultation adoption

Drivers of increased activity

Core users are largely responsible for driving **increased activity** levels.

Clinical user types

Initial analysis suggests three distinct video consultation **clinical user groups** in secondary care settings.

User acquisition

Number of **active clinical users** increased substantially in April, May and June 2020 and then continued to **grow steadily** until January 2021.

Initial analysis suggests three distinct video consultation clinical user groups in secondary care settings

Number of clinical users between April 2020 and March 2021

Over **69,000** different user accounts used by clinicians for video consultations

and each delivered an average of **42** video consultations

Usage varied greatly, but there appear to be three distinct groups

1 in 8

is a **one-time user** (1 consultation)

1 in 3

is a **casual user** (2-10 consultations)

1 in 5

is a **frequent user** (50+ consultations)

Note: User accounts managing virtual receptions (all 'reception' waiting areas) have been excluded.

19% of clinical users are “frequent” and these account for 62% of total consultations undertaken

One-time users

More than 8,500 users
12% of user base

Each delivered one consultation

Tend to have shorter consultations (18 minutes) than the average user (27 minutes)

Casual users

Over 21,000 users
31% of user base

Each delivered between 2 and 10 consultations

Typically, logs into the platform once a day and sees 1 or 2 patients

Frequent users

Over 13,000 users
19% of user base

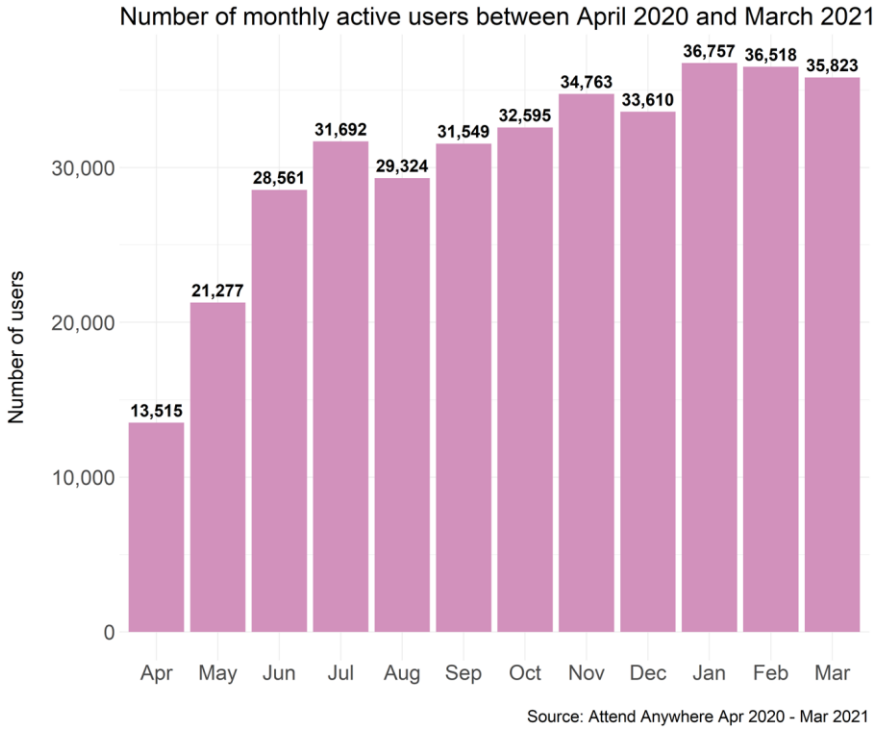
Each delivered over 50 consultations

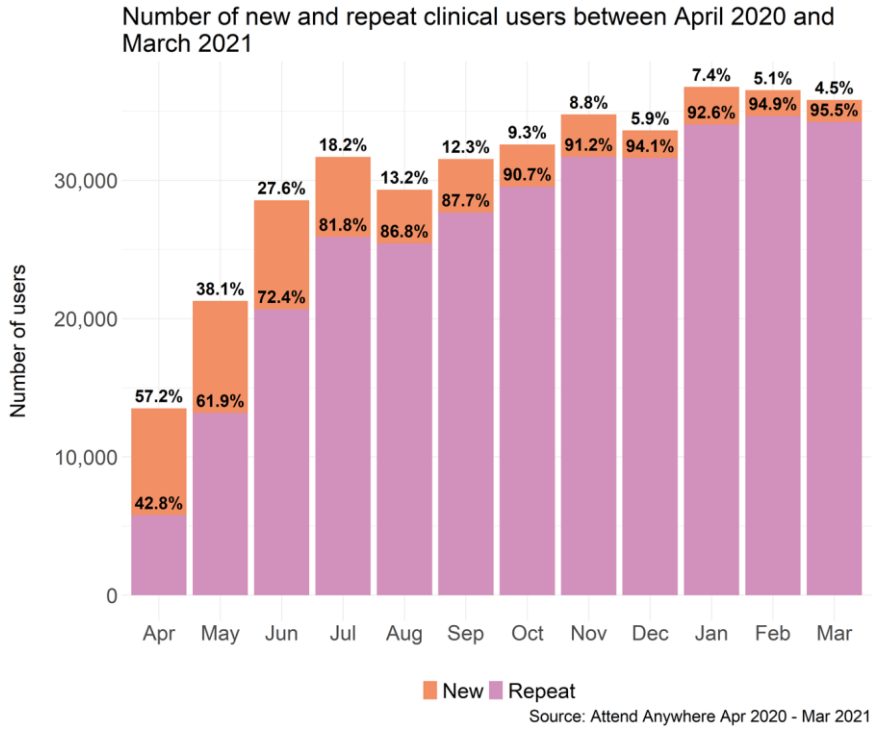
Typically have between one and two consulting sessions (logins) per day[1]

Note: the remaining 38% of users delivered between 10 and 50 consultations can be explained by 'shared accounts' which are described under 'limitations of data interpretation’

1. *A “session” or login is defined as a continuous consulting period with less than 90 minutes between consultations. Consultations more than 90 minutes apart are counted as separate sessions.*

Numbers of new clinical users increased substantially in April, May and June 2020, but have since slowed down

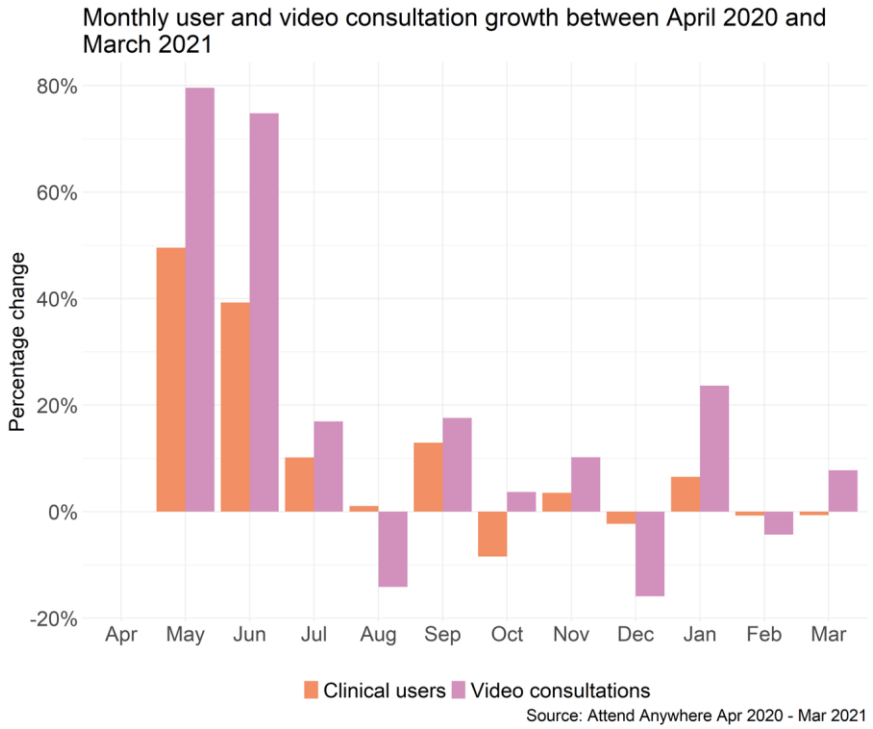


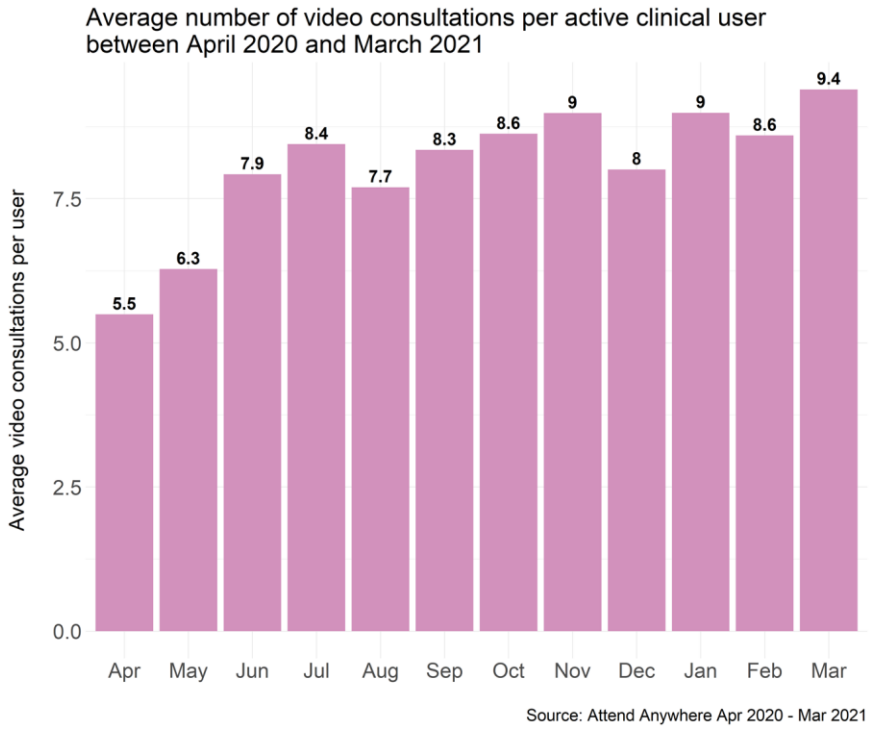


- Between April 2020 and March 2021, over 69,000 clinical users delivered video consultations via the nationally supported platform.
- April and May 2020 had the most significant number of new users, with 16,000 users using the platform for the first time. The rate at which new users started using the platform slowed down and stabilised over summer 2020 – decreasing from 38% of total monthly active users in May 2020 to 4.5% in March 2021.
- Retention rates are relatively high, with over 50% of new users in 2020/21 delivering a video consultation in March 2021.

Core users are largely responsible for driving increased activity levels

Growth in number of video consultations and clinical users





- In 2020/21, the growth rate of video consultations was greater than the acquisition rate of new clinical users, demonstrating that the increased activity of ‘core clinical users’ (those already using the platform) drove growth in usage.
- This suggests that as clinical users gain experience delivering video consultations, they become more confident using the technology and rely on the platform more to deliver care.

Section 5: Project learnings and recommendations – from national pilot to rapid roll out in response to COVID-19

Project learnings and recommendations – from national pilot to rapid roll out in response to COVID-19

The national pilot

The successful rollout of video consultations in secondary care was influenced by the experience and learnings from the pilot underway when the pandemic emerged. A well-designed pilot with solid collaboration can help identify the complexities of scaling and provide a manageable environment to test interventions to solve or mitigate these complexities.

The delivery approach

COVID-19 required an accelerated plan to roll out video consultation capability in secondary care rapidly. The underlying approach of the national team focusing on a small set of enabling interventions, coupled with an aligned network of regional resources, was practical in helping trusts quickly access and implement video consultation technology for patient care.

Project complexities and recommendations

The rapid growth of video consultations in NHS secondary care resulted in several unforeseen complexities, such as platform outages. Similar future technology enabled projects should ensure unforeseen events are used to continually improve the support offer provided. This should always be coupled with an effective and open communications approach.

Project learnings and recommendations

This report documents the scale and pace at which video consultations have been established in secondary care since March 2020. The COVID-19 pandemic was a catalyst that rapidly accelerated adoption, with less than 5,000 consultations in March 2020 to over 340,000 per month by the end of March 2021.

To understand how this shift was enabled, we have evaluated the national video consultation project approach using the Non-adoption, Abandonment, Scale-up, Spread, Sustainability (NASSS) framework [1]. This framework is designed to help healthcare organisations improve the success of technology projects. The framework is built around areas of consideration (domains) that are relevant to technology projects and how complex issues in each may be managed to achieve optimal outcomes.

In this review:

- Part 1 analyses the complexities and learnings of implementing video consultations that were experienced during the pilot against the NASSS domains.
- Part 2 examines whether insights from the pilot improved the conditions for the successful delivery of the rapid roll out of video consultations in secondary care in response to COVID-19.
- Part 3 explores how NHS England and NHS Improvement adapted as complexities arose over the 12 month rapid roll-out project and what learnings can be taken from this.

[1] Greenhalgh T. How to improve success of technology projects in health and social care. Public Health Res Pract. 2018;28(3):e2831815.

Part 1 - The national pilot

To increase the likelihood of success, the NASSS framework identifies a number of domains that should be considered to better understand the complexity and challenges of delivering a significant technology enabled project before it is initiated. To this end, we have explored the substantive aspects of the national video consulting pilot, structured around the NASSS domains, to assess what learnings were drawn from the pilot that subsequently provided a foundation for the rapid roll out of video consultations in response to COVID-19.

Local organisational support

- Buy-in and support from trust leadership, dedicated project resource and an improvement ethos were important factors to overcoming organisation administrative and technical complexities locally.

Getting 'adopters' to adopt

- Encouraging clinicians to give video consultations a go, without obligation to deliver a national target, created a positive adoption environment.

Clarity on the value of the pilot

- The simple project objective of giving patients further choice when deciding how and where to receive care, and clarity on expected benefits of video consultation adoption helped to galvanise interest and trust participation in the pilot.

Appropriate technology

- Identifying 'must have' technology requirements that aligned with established workflows and did not duplicate existing processes were identified as key enablers to simplify the implementation of video consulting technology in NHS secondary care.

Wider system factors

- Identifying effective interventions, done once nationally for the benefit of all trusts, realised significant scale benefits using minimal resources.

Part 1 - The national pilot: Local organisational support

Six areas of local organisational support were identified through the pilot:

a) Leadership support
b) Dedicated project resource
c) Transformation led project supported by IT
d) Cross-team working
e) Patient engagement
f) National support commitment

a) Leadership support

Local leadership was critical to the successful implementation and adoption of video consultations at pilot trusts. In all trusts that we engaged with during the pilot, supportive executive, operational, and clinical leadership was observed. This ranged from staff being provided with dedicated support for video consultation implementation to the active involvement of the executive or clinical leadership teams in the promotion and use of the technology. Many of the local pilots were led by clinical services that believed passionately in the importance of offering video consultations to their patients, such as the physiotherapists at Ashford and St Peter's NHS Foundation Trust, whose drive and belief in the project helped gain buy in from their teams.

b) Dedicated project resource

Dedicated project resource was important to help drive forward the pilot at trust level. Dedicated resource not only provided the capacity required for implementation but demonstrated the trust's commitment to the work. The resource also proved critical for efficient problem-solving as the pilot progressed.

For some trusts, project support came from existing transformation resource, while in others, it was stand-alone dedicated resource. Turnover of staff in these roles did cause delays to implementation across some pilot trusts.

c) Transformation led project supported by IT

Trusts who delivered the project as a transformation project, opposed to an IT led project, ensured that delivery was framed around patients and clinicians and focussed on quality improvement. This ensured that the people delivering video consultations led the change, as opposed to the change being led by the technology imposed on them.

Part 1 - The national pilot: Local organisational support

d) Cross-team working

Cross-team working was essential given the many facets of implementing a new digital service in a hospital environment. The complexities ranged from challenges around information governance to ensuring local IT infrastructure and desktop machines were configured to support web-based video consulting. A challenge for many trusts was adjusting appointments to be booked as video consultations and for patient communication to include information about attending appointments virtually. Ultimately local teams resolved these challenges, but often with more time and effort than anticipated.

e) Patient involvement and engagement

Many trusts involved in the pilot identified early the need to build patient interest, engagement and support for video consultations. Trusts took a range of approaches to engage patient groups. Some trusts directly involved patients in their service co-design, particularly in areas of digital access and building patient awareness, digital skills and confidence. Some trusts used visual promotion tools such as leaflets and banners within outpatient waiting areas to highlight the availability of the service whilst others took a more hands on approach by offering demonstrations of the service to patients in the physical waiting area using a smart device to 'walk' patients through the video consultation experience to build awareness and confidence.

The national project team supported this effort by working with the NHS England and NHS Improvement Behavioural Insights team to better understand the challenges in getting patients to say yes to video consultations. The initial findings of this work established that clinician to patient discussions around using video consultations often yielded greater uptake and willingness to try video over less personal approaches, such as a 'cold call' from the central bookings team.

From the pilot, it was clear that early engagement and co-design with patients and service users is essential to support uptake in the service, and a range of innovative approaches is necessary to ensure patients have a reason to 'buy-in' to video consultations. To be successful, a significant investment of time and resources is necessary to positively impact patient uptake.

f) National support commitment

Throughout the pilot there was significant scepticism in trusts that NHS England and NHS Improvement would end their provision of practical support before the benefits of video consultation adoption could be realised. This scepticism was difficult to counter as the pilot's funding and support offer was time limited. Committing a longer-term offer of practical support and resources (importantly funding) may have helped build more buy-in and trust amongst clinicians.

Part 1 - The national pilot: Getting 'adopters' to adopt

Creating the environment for both patients and clinicians to use video consultations was always going to be a complex behavioural challenge.

The pilot was positioned as optional, with trusts and clinicians able to opt-in without obligation to deliver mandated targets. The only expectation on participants was to give video consultations a go and to share learnings. The national project team sought willing trusts and clinicians and aimed to make it as easy as possible for them, providing the technology, assurances around its suitability, access to a network of peers implementing the same transformational changes, and guidance on how to implement video consultations and use the technology.

The national project team undertook 21 workshops with individual trusts to present the benefits of using video consultations and to explain how the pilot support offer could facilitate adoption. These were well attended in almost all trusts by various people from clinicians to IT and administration staff.

However, initial enthusiasm for the pilot often diminished as the realities of working in a busy hospital resumed and the practical challenges, and time required to implement became apparent.

For pilot trusts that had implemented video consultations, the next challenge focused on recruiting and assuring patients that video was a safe and effective way to receive care. Trusts used a range of approaches to recruit patients, with some offering a ‘test’ call service with patients to address any concerns or technical issues before the consultation took place. While resource-intensive, this approach did appear to increase patient uptake.

During the pilot, access to a technical helpdesk that had been set up and managed by NHS Scotland was also enabled by the national project team to support pilot trusts and clinicians on an ongoing basis. This provided technical support from subject matter experts in NHS Scotland to identify and resolve issues efficiently.

Part 1 - The national pilot: Clarity on the value of the pilot

The pilot's objective was to understand whether it was possible to provide an easily accessible, and scalable digital channel for delivering outpatient care. The NHS Long Term Plan (LTP) publication further supported this objective, committing the NHS to offer 'virtual' outpatient appointments where appropriate (LTP, p.95). This was part of the LTP's commitment to transform outpatient services, as well as an ambition for a greener NHS.

While traditional models of care centre around patients attending face-to-face appointments, there are many appointments across specialties that do not require a physical examination. Whilst many appointments suit a simple telephone consultation, using video provides an opportunity for richer engagement, for instance, non-verbal cues are an important part of the patient-clinician interaction such as in mental health care and can be picked during a video consultation. Visual assessments can also be undertaken such as in “hands-off” physiotherapy, where seeing patient movement can provide valuable information to the clinician.

As well as providing another option for how care can be delivered, video consultations can offer additional benefits. For patients this could be reduced travel time, or simply attending their appointment in a more relaxed and comfortable environment. For clinicians, there are productivity opportunities including reduced DNAs and reduced risk of infection.

During pilot interviews in early 2020, it became clear that some organisations were not always aware of the range of benefits video consultations offer compared to telephone consultations, with both being used to replace a physical environment with a remote one. This changed substantially once clinicians engaged with and used the video technology and understood its flexibility. Awareness of benefits also developed as positive patient stories came to light , including stories where people needed to be seen but were uncomfortable attending consultations in person due to anxieties with the hospital environment, and those who were unable to take time off work to attend their appointments.

Part 1 - The national pilot: Appropriate technology

The national project team played an important role in identifying suitable video consultation technology and enabling its use, this included:

a) Developing requirements for the technology
b) Devolving ownership for managing the technology
c) Supporting investment in hardware.

a) Developing requirements for the technology

While video technology availability was widespread at the pilot's inception in 2019, most available products were not designed with patients, clinicians, and the workflow of hospitals in mind. Many solutions did not lend themselves to systematic scaling of video consultations in secondary care settings (e.g. because they were based on proprietary technology that required users to all have the same software or device).

Establishing requirements for a suitable video consulting product was undertaken through engagement with NHS Scotland, who had been through a similar process and had captured learnings around technology requirements from their video consultation roll out across Scottish NHS Health Boards.

Using these developed requirements, NHS England and NHS Improvement procured the Attend Anywhere platform. The chosen technology largely met the essential needs from a patient and service user perspective, to be simple to access and easy to use and met the necessary levels of security and functionality required for healthcare.

From a clinician perspective, ease of access and simplicity was critical, as was enabling a virtual 'flow' of patients in a way familiar to healthcare professionals which reduced the number of operational changes needed.

Requiring the technology to work in parallel with existing hospital systems and not duplicate existing processes was established as an important technical requirement for the pilot and subsequently for the rapid roll out. Adapting existing booking systems to recognise different appointment types was a challenge, but this was a simpler path to implementation than using a secondary booking system for video consultations.

While integration and interoperability are often considered the 'holy grail' of technology implementation in healthcare, the learnings from the early stages of the pilot suggested that this should not always be an immediate priority. Stand-alone technology was most likely to attract organisational uptake by lowering set up costs and not requiring significant technical resources to get started. The reduced complexity of such an approach also made it easier to engage staff. There was also an additional organisational appeal for piloting a technology in this way as it could be easily removed or replaced if necessary.

Part 1 - The national pilot: Appropriate technology

The requirement to safeguard patient confidentiality and data were core to the pilot's technology requirements. The chosen technology adhered to the highest levels of security, which helped build confidence and trust in its clinical application. Trusts joining the pilot would have undertaken their own due diligence on the technology, but the national procurement for the pilot provided a baseline level of assurance around security, data protection, and confidentiality.

b) Devolving ownership for managing the technology

Locally managed platform administration capability emerged as an important requirement from the outset of the pilot and was critical for the national scale-up in response to COVID-19 as outlined in the next part of this section. Technology that supported the customisation of virtual clinics or setting up new users without supplier or local IT department intervention allowed flexibility and freedom within trusts removing the need for burdensome change control processes, which can be lengthy and slow.

The importance of being able to set up and manage clinical user access, customise clinical areas with specific information such as local branding, SMS and email communication capabilities, and access to activity reporting data on a self-service basis were identified as important in the pilot for local adoption.

c) Supporting investment in hardware

Key insights from NHS Scotland highlighted the importance of ensuring that adequate hardware was available within trusts. Whilst many smart devices are equipped with video capability, hospital desktop computers rarely have fitted cameras and microphones.

Resources for the pilot were limited, but small amounts of funding were provided to the initial cohort of participant trusts to support the purchase of basic hardware. Feedback from the trusts that received the funding, such as Imperial College Healthcare NHS Trust and Surrey and Sussex Healthcare NHS Trust, was hugely positive as approval to spend small amounts within trusts can be a lengthy, and sometimes a complex process. These small allocations generated a significant incentive for implementation.

Part 1 - The national pilot: Wider system factors

A large part of the national project team's role was to identify and address system factors that had historically interfered with the implementation of video consultations or were identified as barriers during the pilot. These included:

a) Funding and procurement
b) Relationships and networks
c) Information governance
d) The national tariff

a) Funding and procurement

The national project team sought to focus its support in the pilot on areas where it could be most effective, helping to reduce the burden of implementation rather than dictating a specific approach. Identifying funding and making a fit-for-purpose technology readily available were important first steps to encouraging participation across trusts, saving participant trust's time and resource. This was supported by well-attended workshops held with trusts that aimed to bring to life the possibilities of video consultations and generate interest locally.

b) Relationships and networks

During the pilot, different and often unforeseen issues arose across participant trusts. These ranged from IT configuration to navigating information governance and building engagement and trust with clinicians. Many of these issues were best solved through peer support from trusts that had already faced and solved the problem. To facilitate this, the national project team created a virtual learning community that over 250 staff across pilot trusts utilised. This platform enabled problem solving, information sharing and other forms of collaboration that enabled quality improvement.

Alongside the virtual learning community, the national project team coordinated a learning visit to Raigmore Hospital in NHS Highlands for pilot participants. The visit provided the opportunity for further networking and learning, as did a more formal learning event hosted by the national project team that allowed pilot trusts to share experiences and learn more about video consultation implementation from peers. The mix of project managers, transformation leads and clinicians at the event demonstrated the blend of skills that trusts acknowledged were needed to succeed in such a project.

Part 1 - The national pilot: Wider system factors

c) Information governance

The national project team facilitated the sharing of local data protection impact assessments (DPIAs) that trusts put in place to meet local information governance requirements. Whilst the technology chosen retained very limited personal data, any data capture and processing needed to be risk assessed to ensure trusts met local information governance standards and safeguards were put in place.

Of the steps that trusts completed before operationally deploying the technology in the pilot, the sign-off of local information governance was the most variable and unpredictable. This took anywhere between three weeks and six months, with each trust taking a different approach to assess the same technology - this was one of the primary reasons why the pilot duration was extended.

During the national scale-up, the information governance learning from the pilot enabled the rapid development of a standardised approach which met local requirements and helped remove this local and often lengthy barrier to adoption.

d) The national tariff

In the past, the national tariff has been a disincentive to the adoption of video consultations in secondary care. The tariff is historically lower for remote consultations – even though the cost of delivery is often equivalent to in-person consultations.

Working with NHS England and NHS Improvement's Pricing team, the national project team supported pilot trusts on agreeing local pricing variations. These negotiations often resulted in prices remaining unchanged for the pilot removing the financial disincentive to adoption.

At the outset of the COVID-19 pandemic, the NHS national tariff was replaced with a nationally agreed approach that effectively removed the issue faced during the pilot.

Part 2 - Rapid roll out in response to COVID-19 - the delivery approach

As part of the NHS response to COVID-19, in early March 2020, the national project team within the National Outpatient Transformation Programme was asked to accelerate access and uptake of video consultation capability within secondary care providers. The goal set by NHS senior leaders was to deliver the sector wide deployment of video consulting capability within four weeks, thereby supporting the continuity of NHS secondary care while limiting the potential risk of COVID-19 infections.

The accelerated roll out used learning from the pilot to identify specific areas where a 'do once' national offer could support many trusts who were all largely grappling with the same challenges to adopt video consulting to deliver care continuity. These areas included:

- Positioning of the national support offer
- Senior NHS leadership support
- Procurement, funding and sub-licencing arrangements
- Choice of technology
- Internal resourcing and relationships
- Provider helpdesk
- Implementation, training, and peer support
- Information Governance
- Capital funding for hardware
- Activity dashboard
- Addressing inequalities

Part 2 - Delivery approach: Positioning of the national support offer

Trusts were asked to embrace digital and operational transformation at a time of unparalleled operational pressure. The national project team made it clear that the national support offer was not intended to be an imposition on frontline and operational staff, instead framing the support offer as optional for trusts looking to deploy and/or scale video consultations as part of their local business continuity plans.

Some trusts opted not to participate and made alternative video consultation arrangements or accessed the support tools in later months as the need arose. It is notable that the majority, about 75% of trusts, did participate in the national support offer. Other trusts used either existing video consulting capability or adopted an alternative video consulting technology that better suited local needs.

The approach to not mandate participation in the accelerated roll out mirrored the pilot's tone and aligned with the role of the Improvement directorate within NHS England and NHS Improvement – to provide improvement support tools for local consideration and optional use.

Based on learnings from the pilot, the national project team recognised the importance of committing to a support offer for a reasonable duration to incentivise trust uptake in response to COVID-19. Whilst it is difficult to assess the impact of a shorter (or longer) support offer versus the 12 months provided, the consistent growth in uptake throughout the rapid roll out shows that the 12 month commitment was overall supportive of uptake and was not a barrier to this.

Part 2 - Delivery approach : Senior NHS leadership support

A significant enabler to the delivery of the rapid roll out of video consultations was the full support and alignment of NHS England and NHS Improvement, national and regional leaders and teams, and NHSX. This sponsorship allowed the timely progression of the project business case, finance and procurement sign-off, and access to comprehensive commercial and legal expertise and support.

Directors and teams in the seven NHS regions also aligned to the mission of the project and quickly grasped the potential benefit to patients that the project could realise in response to COVID-19. NHS England and NHS Improvement regional directors therefore made essential resource available without which delivery of the project would have been significantly impaired.

The alignment of national and regional teams around a clear shared objective provided a signal to trust leaders that the rapid roll out of video consultations project was worth prioritising amongst many other competing priorities. Many senior leaders within trusts responded to this and actively supported participation in the project. Mirroring the findings from the pilot, this senior leadership support within trusts clearly helped drive clinical buy-in and adoption.

Part 2 - Delivery approach : Procurement, funding and sub-licencing arrangements

Central to the agreed national project approach was the procurement and funding of a single video consultation solution. This approach simplified and sped up the implementation of the technology, removing the need and resource requirement for individual trusts to rapidly identify, fund and procure fit for purpose technology. Using one platform also enabled NHS England and NHS Improvement national and regional teams to support a standardised implementation approach.

The licencing arrangements did restrict access to the video consultation platform to NHS Trusts and Foundation Trusts only. This created some challenges where clinical services were in part provided by third sector organisations. However, solutions to this were largely found locally.

As observed in the pilot, funding and procuring the technology on behalf of many trusts removed a significant barrier to adoption in response to COVID-19 and likely made the support offer more compelling and implementation more achievable. This was confirmed in a survey[2] where 82% of trust users said the procurement and funding of a national licence to a video consultation platform was 'very helpful'.

[2] NHS England and NHS Improvement Secondary Care Video Consultation Requirements Nov 2020 - survey of 1,036 video consultation trust users in NHS secondary care (undertaken by PWC)

Part 2 - Delivery approach : Choice of technology

Through the pilot and learnings from NHS Scotland it was evident that there was a genuine challenge to identifying video consulting technology suited for clinical use in the NHS. By using evidence-based requirements identified through the pilot and a compliant procurement process, this known barrier to trust implementation was removed by centrally procuring a fit for purpose technology for the rapid roll out.

The requirements identified and used for the procurement included: ease of use, flexible configuration, information governance simplicity, high levels of security, accessibility, web-based, and the ability to mirror existing trust clinical workflows. In addition, the requirements stipulated that the technology was suited to scaling.

As with the pilot, centrally procuring and supporting a single technology for the national roll out provided trusts and clinicians with a base level of assurance that the platform was safe, secure and operationally fit for purpose in the NHS.

The simplicity, accessibility and functionality of the video technology procured by NHS England and NHS Improvement appears to have been an important component of the rapid roll out, with many trusts implementing and using the technology to deliver patient care in only 5 days. The sustained clinical user uptake during the months after implementation, also validates that the technology, specifically its simplicity and usability, were important factors in supporting sustained uptake.

Part 2 - Delivery approach : Internal resourcing and relationships

The speed at which resource was mobilised in the national project team and regional teams was paramount to the successful delivery of the project. Some regional teams built on existing resource whilst others mobilised project specific local delivery teams to support trusts with their implementation. Additional resource from NHS Digital was also deployed to each region to support training trust staff on how to use the technology and to provide targeted implementation support where needed.

The way of working between the national project team and regional teams was collaborative, aligned and transparent from the start of the project. It appears that much of this was driven by strong cross organisational relationships that were in place before the rapid roll out commenced as well as a strong cross team desire to contribute to the overall COVID-19 response effort.

Part 2 - Delivery approach : Provider helpdesk

During the pilot, trusts were able to access ongoing user support from the NHS Scotland helpdesk. Feedback throughout the pilot on this service was positive and supported uptake and adoption. Expanding the arrangement with NHS Scotland was initially explored but was discounted due to the unknown demand that could have been placed on the service from England users. Subsequently, a new provider helpdesk, providing phone and email support was set up by the national project team using an experienced third-party supplier.

While the helpdesk took two weeks to set up, it took longer to build the technical knowledge and capability of the service. The national project team filled this initial deficit as the new helpdesk steadily developed knowledge and understanding to adequately support trust users.

Call and email volumes to the helpdesk equated to approximately one enquiry per 700 video consultations, and survey[3] feedback found it to be "very" or "quite" helpful for 64% of users surveyed.

[3] NHS England and NHS Improvement Secondary Care Video Consultation Requirements Nov 2020 - survey of 1,036 video consultation trust users in NHS secondary care (undertaken by PWC)

Part 2 - Delivery approach : Implementation, training, and peer support

By supporting a single technology, the national project team and regional teams were able to use a standardised and coordinated model for deployment and implementation. This approach enabled rapid scaling and was also supported by a train-the-trainer approach on how to use the technology, with training delivered from the national project team to regional colleagues who, in turn, trained trust staff. Many trusts also adopted a train-the-trainer approach internally.

The NHS England and NHS Improvement national and regional teams developed training and implementation materials and shared them openly across the country via the FutureNHS Collaboration platform. Anecdotal evidence of local 'self' teaching was observed as many clinicians considered the technology simple to use without additional training support.

A single technology made it easier for regions to standardise their implementation approach with a common set of training webinars, user training materials, and implementation resources. This included a five-day rapid implementation plan that was shared within and across regions that was successfully implemented by many trusts. Regional webinars were made available in real-time across the country and supported peer to peer learning between trusts.

The adopted delivery approach devolved operational implementation to trusts, with national and regional teams supporting local teams as required. This enabled trusts to manage platform user access, permissions, and customisations to meet local requirements at a speed which suited them. An example of this was seen in Tees Esk and Wear Valleys NHS Foundation Trust where the delivery team scaled 10 video consulting waiting areas they had set up in April 2020 to over 100 by mid-June 2020.

Overall, 78% of respondents to a survey[4] undertaken on behalf of NHS England and NHS Improvement confirmed that the implementation approach taken to support the rapid roll out was a success.

[4] NHS England and NHS Improvement Secondary Care Video Consultation Requirements Nov 2020 - survey of >1,036 video consultation trust users in NHS secondary care (undertaken by PWC)

Part 2 - Delivery approach : Information Governance

The pilot highlighted that fulfilling local information governance requirements, such as local data protection impact assessments (DPIA), was often challenging and time consuming for trusts and a notable barrier to adoption – sometimes taking up to six months from development to sign-off.

To address this barrier, a comprehensive nationally assured DPIA template was developed and signed off by the NHS Improvement Senior Information Risk Owner early in the rapid roll out. This template was developed and shared to help trusts rapidly address and complete local information governance processes. The approach allowed for the national DPIA template to be iterated and updated on an ongoing basis as new use cases for how the data was being processed emerged. Updated versions of the nationally assured DPIA were then shared locally for consideration in local DPIAs.

Provision of the DPIA and ongoing information governance support, with the national project team liaising centrally with the supplier and the national Information Governance team on behalf of trusts was found to be useful with over 87%[5] of trust users surveyed describing the support as either 'helpful' or 'very helpful'.

[5] NHS England and NHS Improvement Secondary Care Video Consultation Requirements Nov 2020 - survey of 1,036 video consultation trust users in NHS secondary care (undertaken by PWC)

Part 2 - Delivery approach : Capital funding for hardware

While many patients have access to video enabled devices, such as smartphones, trusts often lack the suitable hardware to support video consultations.

As highlighted in the pilot, investment in hardware was an effective catalyst for adopting video consultations in trusts. As such, £20,000 of capital funding was made available to each trust to support implementation during the rapid roll out. Trusts used this funding to purchase the required equipment, such as cameras or tablet computers, and was available irrespective of which video consultation platform a trust used.

The national project team also sourced a supply of smart tablets at a time of significant supply shortages, as the pandemic disrupted global production and supply of IT hardware. Many trusts used their funding allocations to access this central supply.

Research undertaken in Autumn 2020 confirmed that the provision of this capital fund for hardware, and the reliable source of smart tablets made a significant difference to trusts, enabling timely access to and purchasing of essential video consultation equipment. Of trust users surveyed[6], 80% found the capital support either helpful or very helpful.

[6] NHS England and NHS Improvement Secondary Care Video Consultation Requirements Nov 2020 - survey of 1,036 video consultation trust users in NHS secondary care (undertaken by PWC)

Part 2 - Delivery approach : Activity dashboard

To support adoption the national project team developed an activity dashboard to support trusts to scale and embed video consultations. The dashboard provided information on platform usage which is often missing in local data systems due to reporting issues. By creating a platform which shared activity data and trend analysis it also enabled trusts, systems and regions to better identify areas where targeted support would help drive local adoption, as well as signpost to areas of success for replication in other areas.

The dashboard also provided trend activity insights that were used to understand the potential demands that would be placed on the technology in future months. These insights supported the technology supplier to implement essential infrastructure enhancements to ensure the platform remained reliable and resilient as the demands on it increased.

Part 2 - Delivery approach : Addressing inequalities

At the start of the rapid roll out in response to COVID-19, the evidence of the impact of video consultations on those with protected characteristics and those facing health inequalities was limited. However, it was important that the national project team took steps to address likely areas of negative impact on these patient groups as part of the roll out.

The national project team worked with NHSX and the Department of Culture, Media and Sport to quickly establish a temporary agreement with many mobile phone network providers to provide free 4G data to those accessing the nationally supported platform from a mobile network connection. This arrangement enabled patients using data constrained mobile contracts or those using 'pay as you go' tariffs, to access NHS care on video without the worry of additional mobile data costs.

In addition to this, the national project team worked with NHS Scotland and NHS Wales to broaden the accessibility of patient-facing support materials, by translating these into multiple languages to make it easier for non-English speaking patients to access technical support.

Whilst there is significantly more to be done in this area, it is likely these interventions played a positive role in widening access to NHS care through video consultations.

NHS England and NHS Improvement has now undertaken a comprehensive equality and health inequalities impact assessment (EHIA) for video consultations in secondary care which will inform work priorities of the national project team going forward.

Part 3 - Rapid roll out in response to COVID-19 – adapting to project complexities and identified learnings

The scale of the rapid roll out of video consultations in response to COVID-19 presented different, and largely unforeseen practical and strategic complexities compared to those experienced during the pilot. Without proactive intervention, these complexities would have reduced the project's impact and limited the longer-term benefits of the work.

This section explores some of the substantive challenges that emerged throughout the rapid roll out and evaluates the national project team's response to identify learnings for NHS England and NHS Improvement, trusts and systems as they continue to support video consultation adoption and considers other technology-enabled improvement projects.

Managing technology stability

- Reliability of the nationally supported platform was central to clinician's confidence in the technology. Clear communications and incident management processes were essential to maintaining confidence. Future projects should manage reliability expectations during phases of early rapid adoption and build service management capability and appropriate service-related communication channels into the support offer from the outset.

Building awareness to support adoption

- Case studies, social media, local media stories and support from clinical advocates all helped to highlight and promote the benefits of video consultations. Going forward, focusing interventions on patient awareness and patient support that promotes video consulting as a legitimate channel to receive NHS care will help drive patient demand for this service.

Project transition to a local system led approach in 2021/22

- Central funding and practical support were provided to trusts and systems to transition to locally managed video consultation arrangements at the end of the rapid roll out project. To achieve optimal local video consulting capability in the longer term, trusts and systems should begin work as early as possible to have in place embedded and system-aligned video consulting arrangements beyond the current funding transition year (2021/22).

Part 3 - Adapting to project complexities: Managing technology stability

During spring 2020, video consultations scaled rapidly. This increased usage, placed significant demands on the platform, especially at peak times. As seen with other digital platforms rapidly adopted during the pandemic, this led to a cluster of platform outages which impacted the service and frustrated users. These outages led to frustrations of some clinical users and local project leads and impacted confidence in the project.

The national project team undertook two key activities to mitigate the impact. The first was to work with the platform supplier to proactively address the technical challenges and build more robust change management processes that included more technical input from NHS England and NHS Improvement.

The second was to significantly improve communications around platform incidents to trust users. A live status webpage was developed to provide the real-time operational status of the platform, planned maintenance, and known issues. This allowed clinical and operational staff to respond more quickly to incidents.

Reliability will always be a factor in technology implementation projects, particularly when rolling out the technology at scale and at pace. Expectations around this should be proactively managed from the outset of a project, and users should be supported to develop contingency processes. The importance of robust incident management processes and effective and timely supporting communications are hugely important for business continuity when required.

Part 3 - Adapting to project complexities: Building awareness to support adoption

The pandemic has clearly been a catalyst for significant growth in the use of video consultations in the NHS. Given the rapid and widespread adoption, patient and clinician perceptions of video consultations are being shaped rapidly through personal experience, media coverage, messaging of NHS organisations and the views of think-tanks and third sector organisations. It has therefore been important that the national project team pro-actively contribute to the developing narrative around the use of video consulting in the NHS.

Throughout the 12 month rapid roll out project, the national project team was able to support a positive narrative of video consultation adoption by sharing case studies across the sector that highlighted real-life use cases and benefits to patients and clinicians. In addition, the national project team worked with NHSX to ensure its well-publicised "digital play-books" captured positive implementation stories from the nationally supported roll out of video consultations.

NHS England and NHS Improvement used social media channels to acknowledge project milestones and successes. The Royal Colleges were also supportive, sharing content directly with their clinical audiences. At a local level, there are examples of positive media coverage where trusts promoted their efforts to adopt video consultations to the wider public. There are also many examples of clinical advocates actively promoting the use of video consultations within their organisations and across clinical peer groups.

Whilst some local and national media coverage has raised awareness of video consultations in the NHS, most national and local efforts to promote uptake appear to have been directed at encouraging organisational and clinician adoption with less focus to date on building patient awareness, skills and confidence around adopting video consultations. In addition, media coverage over the project, whilst largely positive, has often conflated video consultations with telephone and online (asynchronous web-form) consultations under one badge of "virtual consultations". This is likely to be confusing to patients and the wider public and detrimental to promoting the benefits of video consulting as distinct from other digital channels of patient clinician communication.

To build patient interest in, and demand for secondary care video consultations, NHS England and NHS Improvement should undertake work to build public awareness of the distinct benefits of video consultations in secondary care, differentiating these from telephone and online consultations. This should support more demand driven growth in video consultation adoption which will help to sustain the service in the longer term.

Part 3 - Adapting to project complexities: Project transition to locally led approach in 2021/22

As the rapid roll out project was set up in response to the pandemic, it was agreed nationally that trusts and systems would manage their own video consultation technology arrangements from April 2021.

The national project team were aware of the inherent complexities and time constraints involved with undertaking a procurement, specifically navigating the diverse and complex supplier market and developing video consultation platform requirement specifications. These challenges were exacerbated locally due to the ongoing pandemic, upcoming winter pressures and uncertainty around future funding for video consultation provision in NHS secondary care.

In response to these challenges NHS England and NHS Improvement committed to providing one-year transitional funding for 2021/22 to ensure systems and trusts were able to procure local video consultation capability and safeguard continuity of NHS secondary care being delivered through video consultations.

The national project team undertook an accelerated research project to capture the current and future requirements of NHS secondary care users of video consultation platforms to support development of local requirements for local procurements. The research project also undertook an objective stratification exercise of the supplier landscape to help systems and trusts better understand the video consultation market and capabilities.

The national project team held supplier briefing sessions to build awareness of the national policy direction amongst suppliers and to share the research findings to help inform their product development. The national project team also provided advisory commercial support to local systems as needed.

Whilst the timelines were challenging, qualitative feedback suggests these interventions provided effective and practical support and ultimately ensured all local systems were able to continue providing video consultations to patients once the national contract ended.

Going forward, systems and trusts will need to make the business case early for local funding of video consultation technology against many other competing priorities. The case for this resource should be made as early as possible to provide certainty to clinical services that increasingly rely on video consultation technology to deliver care. NHS England and NHS Improvement should engage systems early in 2021/22 to understand what support is required centrally in this respect.

Appendices

Appendix A

- **Estimating total video consultation activity (all platforms)**

  - **Acute and specialist trusts**: Out of the 142 acute and specialist NHS trusts in England, 119 (84%) used the nationally supported platform in 2020/21 and delivered an average (median) number of 10,402 video consultation. Assuming that the 23 trusts using alternative platforms delivered the median number of video consultation, an additional 239,246 video consultations have been delivered in 2021/22, equating to a total of 1,970,775 video consultations.
  - **Mental health and community trusts**: Similarly, out of the 68 mental health and community NHS trusts in England, 49 (72%) use the nationally supported platform in 2020/21 and delivered an average (median) number of 18,696 video consultation. Assuming that the 19 trusts using alternative platforms delivered the median number of video consultation, an additional 355,224 video consultations have been delivered in 2021/22, equating to a total of 1,538,827 video consultations.

- **Achievable video consultation target (all platforms)**

  - **Acute and specialist trusts:** The achievable target for acute and specialist trusts is calculated using the upper quartile of take-up in the Attend Anywhere and HES data sets.
  - **Mental health and community trusts:** The achievable target for mental health and community trusts is calculated using the upper quartile of activity in the Attend Anywhere data set due to data quality issues with mental health and community trusts data in HES.

Appendix B

- **Assumptions for prices of PPE items**[1]

Peak-pandemic prices

Item	Price
Facemask	£0.55
Apron (roll of 200)	£0.12
Gloves (pair)	£0.20
Eye protectors	£1.00

Post-pandemic prices

Item	Price
Facemask	£0.06
Apron (roll of 200)	£0.02
Gloves (pair)	£0.03
Eye protectors	£0.67

- **Assumptions for weights of PPE items**

Item	Weight	Source
Facemask	3.5 grams	indiamart.com
Apron	3.9 grams	physique.co.uk
Gloves (pair)	4.5 grams	amflexind.com
Eye protectors	4.4 grams	viking-direct.co.uk

Example calculation:

- *2 pairs of gloves per outpatient consultation x 3,000,000 consultations = 6,000,0000 pairs saved*
- *6,000,0000 x 4.5 grams = 26,247,681 grams = 27 tonnes*

1. Reference prices from a large acute trust

Appendix C

- **Breakdown of patient travel mode**

Mode of transport	% distance covered
Walk	2.66%
Bicycle	0.20%
Car / van driver	44.11%
Car / van passenger	33.30%
Motorcycle	0.38%
Other private transport	3.08%
Bus	12.78%
Train	3.49%

Composition of car fleet	% distance covered
Diesel	54.12%
Petrol	44.90%
Electric	0.98%

Note: Assumptions and methodology developed by the NHS England and NHS Improvement Outpatient Transformation Programme team. Data taken from the SDU's Health Outcome of Travel Tool (HOOY)

Appendix D

- **Assumptions for calculating car parking charges**

    - 77% of all NHS parking spaces charge for visitor parking[1].
    - 44% of patients drive to their appointment[2].
    - The waiting time for a consultation is 50 minutes and the consultation is 20 minutes, meaning that patients would pay for 2 hours of parking at a total cost of **£2.75**[3] per visit.

1. *Parkin et al., 2020, NHS hospital car parking policies in the UK, UK Parliament*
2. *Assumptions and methodology developed by the NHS England and NHS Improvement Outpatient Transformation Programme team. For more details, see Appendix C.*
3. *Department of Health, NHS car parking management: environment and sustainability, 2015*

Appendix E

- **Assumptions for calculating labour productivity gains**

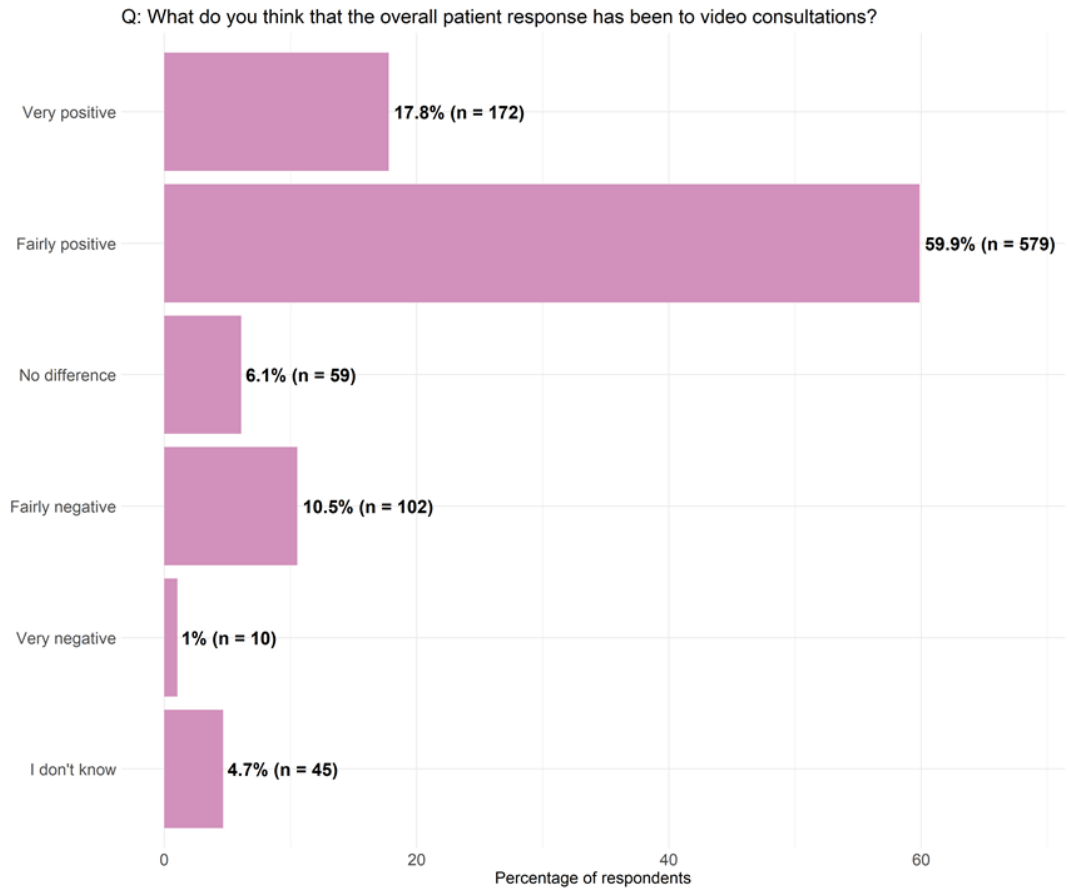
  - 24 minutes travel time to hospital each way, and 45 additional minutes spent waiting compared to a video consultation.
  - Video consultations for adult patients estimated by excluding over 160,000 consultations in Paediatric services.
  - 12% of patients are already absent from work because of annual leave, long term sickness or out of hours appointments[1].
  - 77% employment rate in England[2] for people aged between 16 and 64.
  - Gross value added (GVA) per hour worked in England for 2019 = £36.48[3] (Note: GVA per hour worked for 2018 (£35.57) adjusted to 2019 costs based on 2.6% inflation rate).

1. *The Potential Economic Impact of Virtual Outpatient Appointments in the West Midlands: A scoping study, 2012, The Strategy Unit*
2. *Labour market in the regions of the UK, June 2020, ONS*
3. *Subregional productivity in the UK: Labour productivity indices by Local Enterprise Partnership (ONS, last updated 28 February 2020)*

Appendix F (1)

NHSE/I 2020 survey on the usage of video consulting by clinicians and operational teams

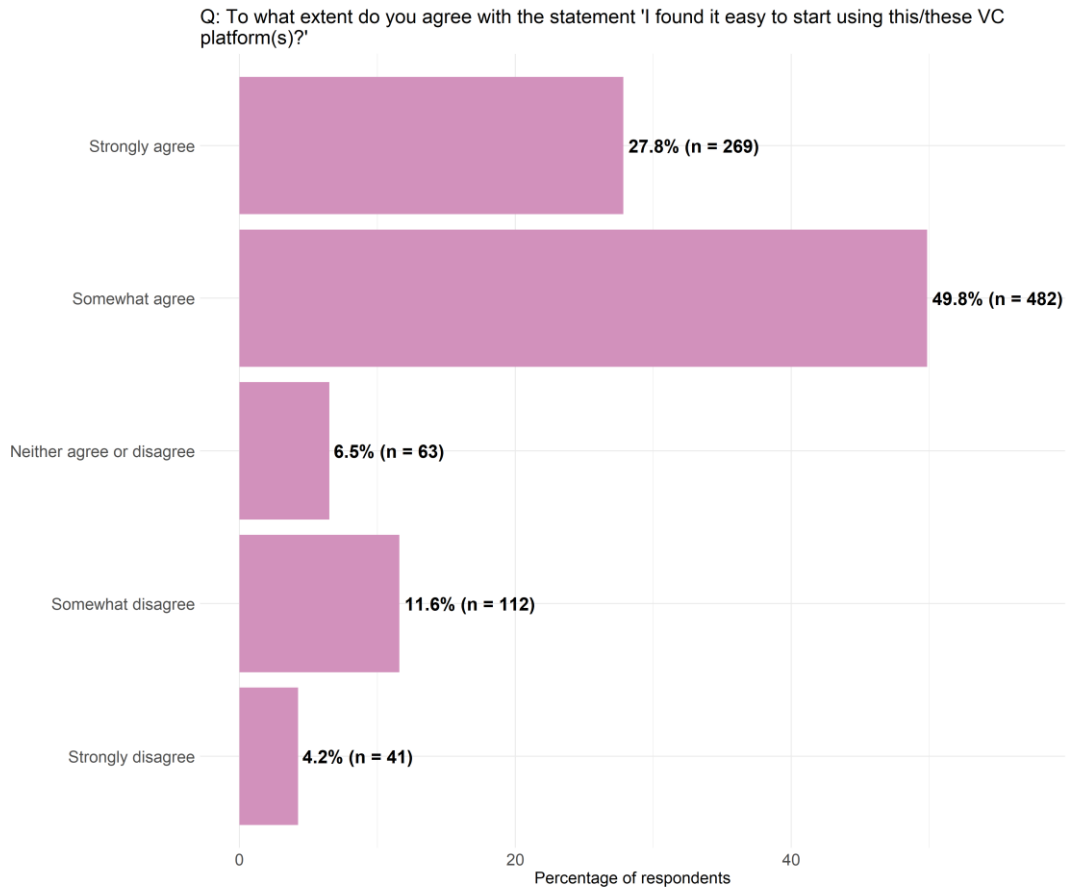
- Q: What do you think that the overall patient response has been to video consultations?



Appendix F (2)

NHSE/I 2020 survey on the usage of video consulting by clinicians and operational teams

- Q: To what extent do you agree with the statement ‘I found it easy to start using this/these VC platforms(s)?



Appendix F (3)

NHSE/I 2020 survey on the usage of video consulting by clinicians and operational teams

- Q: What do you think that the overall carer response has been to video consultations?