

ORIGINAL RESEARCH

Attend anywhere clinic: A virtual outpatient clinic experience in otolaryngology during the COVID-19 pandemic

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Abstract

Introduction: Numerous technological advances have been made during the COVID-19 pandemic. There has been a growing body of evidence highlighting the value of virtual consultations as an adjunct to physical appointments. This study presents the virtual clinic experiences of one ENT department in the UK.**Methods:** Retrospective review of all virtual consultations undertaken at a single ENT department during the COVID-19 pandemic.**Results:** A total of 556 virtual consultations took place during the study period across all ENT sub-specialties. Of which 27% of patients were converted to face-to-face follow-up and over 30% were discharged following a virtual consultation. Out of 333 video consultation, 31% were converted to telephone due to patient preference or technological difficulties.**Conclusion:** This study highlights the benefits and lessons learnt from implementing a virtual clinic system in ENT. The authors recommend the introduction of video consultation as a useful adjunct to face-to-face appointments during the COVID-19 pandemic and beyond.**Level of Evidence:** 4.

KEYWORDS

appointments and schedules, COVID-19, otolaryngology, referral and consultation, telemedicine

1 | INTRODUCTION

The COVID-19 pandemic has required departments across the UK's National Health Service (NHS) to make novel changes to their practice to maintain a semblance of "normal" out-patient activity.

The benefits of virtual consultations have been well documented in the literature and are viewed by many as a potential solution to the growing challenges of providing a prudent health care service within the NHS.¹ Virtual clinics, when compared to traditional face-to-face

clinics, have both social and economic benefits for patients. Hence, some specialties have incorporated virtual consultations into their routine practice.

The challenges of providing face-to-face services have been highlighted by the COVID-19 pandemic, where physical attendance at out-patient clinics posed a potential risk to both patient and clinician via droplet spread.² The need for reduced footfall in hospitals and social distancing, coupled with limited out-patient capacity has further highlighted the benefits of virtual consultations.³ As a result, ENTUK

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provided guidance on the provisional virtual consultations, particularly in head and neck cancer referral triage.³⁻⁵

Review of literature has revealed that Otolaryngologists may be at the highest risk of developing COVID-19 from their patients due to the repeated exposure to the aerodigestive tract.⁶ Therefore, virtual consultation presents a particular benefit for ENT surgeons in the COVID-19 era.

Our ENT Department was the first ENT unit in Wales to implement the "Attend Anywhere" platform to provide virtual clinic appointments for both new and follow-up patients for urgent suspected cancer (USC) and urgent referrals. Attend Anywhere is a secure software service to allow health care professionals to undertake consultations with their patients via telephone or video call.⁶ Following this initial consultation, patients can then be converted to a physical, face-to-face appointment if further clinical examination is required. Due to the limited space in our unit to allow adequate social distancing, multiple consultant-led virtual clinics along with a single consultant led face-to-face clinic took place on a daily basis.

There has been some reluctance for the uptake of virtual consultations in ENT, since they do not permit invasive examination, such as otoscopy or flexible nasoendoscopy. Therefore, this study aims to convey our experience of virtual clinics in ENT during the COVID-19 pandemic, and seeks the lessons learnt for future, long-term implementation following the resumption of "normal" out-patient activity.

2 | MATERIALS AND METHODS

This study comprises a retrospective analysis of all virtual consultations which took place in this tertiary ENT department over a period of 4 months (June–September 2020). All patients of all ENT Consultants who were consulted during this time period were included in data analysis.

The data was collected from the electronic outpatient appointment list and clinic letters which includes patient demographics, sub-specialty, nature of the referral, consultation (video or telephone), new or follow-up, length of consultation and clinical outcomes (discharge, conversion to physical follow-up). For new referrals, only USC and urgent cases were seen in the virtual clinic. For follow-up patients, only USC, urgent and routine (who were expedited due to long-wait or symptoms worsening) were seen. All new referrals which were graded as routine and routine follow-up were not seen under the Attend Anywhere platform. Data was also recorded on any anecdotal difficulties faced by clinicians or patients using virtual consultation methods and the means to overcome these.

All anonymized data was collected and input to Microsoft Excel (Redmond, WA, UA). This study has followed the SQUIRE-2.0 reporting guidelines.

2.1 | Institutional review board

This research is exempt from institutional review board.

3 | RESULTS

During the 4-month period, 573 patients were booked for virtual consultation with 7 ENT Consultants. Of which 556 (97%) consultations took place as planned, 15 patients did not attend (DNA) and there were 2 cancellations.

Out of 556 patients, 396 (71.2%) were adults over the age of 16 years and 160 (28.8%) were of pediatric age group, 412 (74.1%) of the consultations were follow-ups and 144 (25.9%) were new referrals.

Out of 556 consultations, 499 (89.75%) were urgent, including 304 expedited routine cases, and 57 (10.25%) were urgent suspected cancer. All urgent or suspected cancer referrals were triaged appropriately via virtual methods by an ENT Consultant as per the latest ENT-UK recommendations.^{4,5}

Out of 556 consultation, 333 (58.90%) were originally planned to have video consultation. Out of 333, 230 (69%) of these went ahead as planned. The remaining 103 (31%) were converted from video to telephone. The reason for changing these to telephone consultation was 52 (50.5%) due to patient preference, 23 (22.3%) due to lack of webcam video, 13 (12.6%) due to lack of internet access and 15 (14.6%) due to video failure. In total, 230 (41.4%) video consultations and 326 (58.6%) telephone consultations took place during the study period.

The average length of consultation was 11 minutes, with the longest consultation lasting 32 minutes.

When divided according to sub-specialty, out of 556 patients, 246 (44.2%) were otology, 190 (34.2%) were head & neck / laryngology, 108 (19.4%) were rhinology and 12 (2.2%) were skins/facial plastics (Table 1).

Following virtual consultation, 157 (28.23%) patients were given face-to-face follow-up to facilitate physical examination or invasive procedure, such as flexible nasoendoscopy or biopsy. In the remainder 30 (5.39%) were listed for further virtual follow-up, 78 (14.02%) were added to see-on-symptom list, 170 (30.57%) were discharged from further ENT follow-up, 68 (12.23%) further testing or imaging was requested with the plan for follow up based on the results, 26 (4.67%) patients were added to surgery waiting list, 10 (1.79%) had their surgery waiting list expedited, 9 (1.61%) continued on the existing surgery waiting list and 8 (1.43%) were referred to other specialty.

When comparing patients' outcomes who had telephone (n = 326) vs video (n = 230) consultations, 91 (27.9%) of the telephone consultations were converted to face-to-face follow-up and 66 (28.7%) of the video consultations were converted to face-to-face follow-up.

In the cohort of patients who had video consultations (n = 230), 33 (14.3%) had testing/imaging requested, 12 (5.2%) were listed for surgery, 3 (1.3%) had surgery expedited and 3 (1.3%) were referred to another specialty. In the telephone cohort (n = 326), 35 (10.7%) had testing/imaging requested, 14 (4.3%) were listed for surgery, 7 (2.1%) had surgery expedited and 5 (1.5%) were referred to another specialty.

TABLE 1 Clinical outcomes of patients who underwent virtual consultation—divided by ENT sub-specialty and type of appointment (new or follow-up)

ENT subspecialty	Type of appointment	Total	Converted for face-to-face	Virtual follow-up	See on symptom follow-up	Discharged	Imaging/testing needed	Added to surgery waiting list	Surgery list expedited	Already on waiting list	Referral to other specialty
Otology (N = 246)	Follow-Up	196	58	21	39	59	9	5	1	1	3
	New	50	7	3	7	15	16	0	0	0	2
Rhinology (N = 108)	Follow-Up	90	24	1	12	26	7	7	7	6	0
	New	18	4	0	0	4	9	0	0	0	1
Head & Neck (N = 190)	Follow-Up	114	31	1	16	34	16	11	2	2	1
	New	76	28	4	3	27	11	2	0	0	1
Skins/facial plastics (N = 12)	Follow-Up	12	5	0	1	5	0	1	0	0	0
	New	0	0	0	0	0	0	0	0	0	0

4 | DISCUSSION

The response to the COVID-19 pandemic within the NHS has provided numerous technological advances and the ability to provide a flexible, prudent health care service. Evidence has shown that there is generally a high patient and clinician satisfaction with virtual consultations in health care.⁷ The *NHS Long Term Plan* also clearly sets out the need for more emphasis to be placed on virtual consultation in future.⁸

Virtual consultations are not a new concept.^{1,2,7} But this retrospective review presents the lesson learnt from the rapid implementation of a virtual clinic system in a single tertiary ENT department in Wales during COVID-19, which has valuable lessons for others wishing to do the same in their own settings.

Interestingly, otology patients were the most commonly reviewed patients in our virtual clinic (44.24%). The skins/facial plastics patients were most commonly converted from virtual to F2F (41.67%), however this may be due to a small sample size. Ignoring this small sample size, the head and neck patients were the second most common group to be followed-up with face-to-face (31.05%) appointment, followed by otology (26.42%) and then rhinology (22.22%). Likewise, the discharge rate was highest amongst the skins/facial plastics patients (41.7%), followed by head and neck (32.1%), otology (30.1%) and rhinology (27.8%).

ENT-UK, in response to the COVID-19 pandemic and recognizing the limitations of out-patient services during this time, produced a set of guidelines for the triage of all new head and neck cancer referrals, and ensure that only appropriate cases were being seen face-to-face.^{4,5} This was completed in the virtual setting by an ENT Consultant, so that referrals could be upgraded or downgraded appropriately following initial triage. Given the ramifications of a missed cancer diagnosis, this likely explains the large conversion rate to face-to-face follow-up for head and neck patients.

The value of the virtual clinic system means that a semblance of normal out-patient activity was maintained throughout the crisis. Whilst we were not able to maintain full out-patient activity during the ongoing COVID-19 pandemic, this study highlights the value of virtual consultations if implemented appropriately alongside normal face-to-face appointments.¹ The authors recommend the use of virtual consultation software beyond the COVID-19 era as a useful adjunct to physical consultations.

Anecdotally, we found that more elderly patients opted for telephone consultations rather than video consultations and were more likely to have technological difficulties with the Attend Anywhere platform. Over 30% of patients were converted from video consultation to telephone due to numerous reasons, which should be accounted for in future implementation and appropriate time allocated for this.

This retrospective review highlighted a number of other benefits of virtual consultations, particularly in the routine patient cohort. For example, patients who were already on the surgery waiting list could be expedited depending on the severity of their symptoms or “pre-consented” to allow full informed consent to take place prior to the

day of surgery. In addition, some patients had further tests or imaging booked following their initial consultation, which meant these results would be available prior to further virtual or face-to-face follow-up. This represents a particular benefit to virtual consultation, where a face-to-face appointment was potentially saved for patients with more urgent or serious presentations that required physical review.

When comparing the video and telephone patient outcomes, there was minimal difference between the conversion rate to face-to-face consultation (phone 27.9% vs video 28.7%). Likewise, there was little difference between phone and video cohorts when making the decision to request further testing/imaging, list for surgery or refer to another specialty.

From the patient's perspective, virtual consultations also save travel time, logistics of travel, anxiety of finding a parking space and avoids taking time off work to attend a face-to-face appointment. This ultimately ensures we are providing patient-centered care and avoid any unnecessary patient exposure to COVID-19 by attending hospital for their appointment.

New referrals which were graded as routine and routine follow-up were not seen under the Attend Anywhere platform due to service constraints during the pandemic and to prioritize urgent suspected cancer, urgent and long waiting routine follow-up cases, however, this can be used to provide health care service in future. Currently, Attend Anywhere annual subscriptions vary depending on the number of "active users" within each department.⁶ Therefore, the scope for cost-savings to the NHS by rolling out virtual clinic systems needs to be investigated prior to widespread implementation across other specialties.

4.1 | Limitations

This study did not assess patient satisfaction with the virtual clinic system, however there were no complaints received to date. Likewise, the long-term flaws of virtual consultations will need to be further investigated, including the potential for missed diagnoses, re-attendance and litigation issues. This was beyond the scope of this study.

5 | CONCLUSIONS

This study demonstrates that implementation of virtual clinic system can be done successfully in ENT and highlights the lessons learnt for future implementation beyond the COVID-19 pandemic. The authors believe that virtual consultations provide a useful adjunct to physical

appointments as well as a flexible, prudent, patient-centered approach to health care.

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CONFLICT OF INTEREST

We the above-mentioned authors confirm that there are no conflicts of interest and have read the article individually and have approved the content.

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BIBLIOGRAPHY

- Greenhalgh T, Vijayaraghavan S, Wherton J, et al. Virtual online consultations: advantages and limitations (VOCAL) study. *BMJ Open*. 2016;6:e009388.
- Greenhalgh T, Wherton J, Shaw S, et al. Video consultations for covid-19. *BMJ*. 2020;368:m998.
- ENT UK. *Guidance for outpatient clinic numbers during the pandemic*. <https://www.entuk.org/ent-uk-guidance-outpatient-clinic-numbers-during-pandemic>. Accessed November 10, 2020.
- ENTUK. *Remote triaging of urgent suspected head and neck cancer referrals during Covid-19 pandemic*. 2020. https://www.entuk.org/sites/default/files/files/ENTUK_2WW_Telephone_Triage_Letter.pdf. Accessed October 23, 2020.
- ENTUK. *Guidelines for changes in ENT during COVID-19 Pandemic (Section 8)*. <https://www.entuk.org/entuk-guidelineschanges-ent-during-covid-19-pandemic>. Accessed October 23, 2020.
- Attend Anywhere 2020. <https://www.attendanywhere.com/>. Accessed October 23, 2020.
- Jones G, Brennan V, Jacques R, Wood H, Dixon S, Radley S. Evaluating the impact of a 'virtual clinic' on patient experience, personal and provider costs of care in urinary incontinence: a randomised controlled trial. *PLoS One*. 2018;13(1):e0189174.
- NHS. *The NHS long term plan 2019*. <https://www.longtermplan.nhs.uk/>. Accessed October 23, 2020.

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