Insight from patients and healthcare professionals on the implementation of virtual clinics in patients with inflammatory bowel disease

Aditi Kumar,1 Mohammed Nabil Quraishi,2 Shanika de Silva,3 Nigel John Trudgill,4 Helen Steed,1,5 Matthew James Brookes,1,6 Rachel Cooney2

ABSTRACT

Introduction During COVID-19, the management of outpatient inflammatory bowel disease (IBD) changed from face-to-face (F2F) to telephone and video consultations across the UK. We surveyed patients with IBD and IBD healthcare professionals (HCPs) to evaluate the impact of this abrupt transition on patient and HCP satisfaction outcomes, including the barriers and enablers of this service.

Methods Patient satisfaction surveys were sent to patients who had a telephone consultation from May to July 2020. A second survey was sent to IBD HCPs across the UK. Questions from both surveys consisted of a mixture of multiple-choice options, ranking answers as well as short-answer questions.

Results 210 patients and 114 HCPs completed the survey. During COVID-19, there was a significantly greater use of telephone, video or a mixture of consultation. F2F consultations were consistently preferred by patients, with 50% of patients indicating they did not want the option of video consultations. Patients were more likely to prefer a telephone consultation if they were stable and needed routine review. Significantly fewer HCPs (5.3%) intend to use F2F consultations alone, preferring the use of telephone (20.2%) or combinations of telephone/F2F (22.8%), telephone/video (4.4%) or combination of all three consultation types (34.2%). 63% indicated they intend to incorporate video consultations in the future.

Conclusion Telephone and video consultations need to be balanced proportionately with F2F clinics to achieve both patient and HCP satisfaction. Further research needs to be done to explore the use of video medicine in patients with IBD.

INTRODUCTION

Inflammatory bowel disease (IBD) is chronic inflammation of the gastrointestinal tract caused by an immune dysregulation. Patients with IBD are traditionally monitored 3–6 monthly in face-to-face (F2F) outpatient clinics regardless of their disease activity. Implementation of virtual clinics encompassing telephone and/or video clinics has previously shown to reduce this burden.

Significance of this study

What is already known on this topic
► Patients with inflammatory bowel disease (IBD) are traditionally monitored 3–6 monthly in face-to-face (F2F) outpatient clinics regardless of disease activity, which use a significant proportion of outpatient capacity.
► There is increasing pressures within the healthcare system to reduce the increasing pressures on outpatient resources while maintaining a high quality of care towards patients which is safe and cost-effective.
► Implementation of virtual clinics encompassing telephone and/or video clinics has previously shown to reduce this burden.

What this study adds
► Patients with IBD prefer F2F consultations over other modes of consultations, although would continue to use telephone services if offered.
► Video consultations were the least preferred modality for patients with IBD.
► IBD healthcare professionals (HCPs) intend to combine a mixture of F2F, video and telephone consultations to maintain future outpatient services, with over 63% indicating their intentions to implement video consultations.
specialist–patient contact but it is also thought to be an expensive and inefficient way to manage long-term stable conditions. Patients with IBD in remission with low risk of complications may not necessarily need to attend hospital when they are well but still require long-term specialist monitoring for complications and surveillance needs. Unfortunately, these patients use a significant proportion of outpatient capacity, displacing high-risk or unwell patients who require access to hospital-based specialist services.

There have been increasing pressures within all healthcare systems to reduce the increasing pressures on outpatient resources while maintaining a high quality of care towards patients, which is safe and cost-effective. Strategies to reduce this burden include the introduction of virtual clinics, or consultations with patients that take place over the telephone or video. However, virtual clinics require a degree of patient empowerment, and potentially costly information technology, nursing services and administrative support. Reasonable concerns have also been expressed that they may be clinically risky, and/or less acceptable to patients and staff.

Service redesign within the National Health Service (NHS) generally occurs over many stages, which includes identifying a need for change, implementing a pilot study, and obtaining and responding to feedback from the appropriate stakeholders. Change is a slow and steady process with many variables that need to be factored in before it can be employed permanently. However, since the onset of the COVID-19 pandemic with the UK being placed under ‘lockdown’ on 23 March 2020, there was a rapid restructuring and reorganising of hospital resources throughout the UK NHS. To minimise transmission of this highly contagious virus, there was a rapid implementation of telephone and video consultations in exchange for F2F consultations throughout the NHS.

The British Society of Gastroenterology (BSG) and Crohn’s and Colitis UK Foundation published guidance for managing patients with IBD to take into account their perceived higher risk of contracting and developing complications of COVID-19. These patients were advised to stay at home, avoid public gatherings and refrain from coming to hospital if possible. Together with the NHS wide shift this resulted in the rapid switch of all IBD outpatient from F2F consultations to virtual clinics. Although these changes were initially invoked from this unprecedented pandemic, it appears these changes are here to stay: virtual clinics are to become the new norm and healthcare professionals (HCPs) and patients alike must all adapt to these changes. We have thus taken this opportunity to assess and evaluate the impact of a virtual clinic service with a detailed analysis on patient and HCP satisfaction outcomes, outlining potential enablers and barriers of this adapted service.

METHODS AND MATERIALS

Study population

This was a multicentre study from 1 May to 31 July 2020. Surveys were distributed to four hospitals in the West Midlands with a mixture of district general and tertiary care hospitals. During this time, a total of 1000 patients awaiting an F2F appointment were automatically switched to telephone consultations. All patients who received a telephone consultation during the months outlined received a survey request to complete. This was an entirely anonymous survey with no identifiable material or information collected. Specific or individual consent was not obtained as the patients were participating without providing any identifiable material.

A second survey was distributed to IBD HCPs around the UK. This included consultants, nurses, registrars and clinical fellows who were involved in the care of patients with IBD during the pandemic.

Study design

The patient survey was created online via Google Forms and the online link was sent via text or email. If a mobile number was unavailable, paper surveys were posted. Two weeks after the initial survey was texted to patients, a reminder text to complete the survey was sent. The survey included several sections to collect demographic data and responses on: (1) patients’ most recent telephone consultation; (2) future consultations and (3) barriers to telephone consultations.

The HCP survey was created online via Google Forms and the online link was sent through deanery and NHS emails and online social platforms such as Twitter and WhatsApp groups. This survey was distinct from the patient survey and included sections on: (1) pre-COVID-19 consultations; (2) consultation changes made during COVID-19 and (3) adaptations for future consultations. IBD HCPs who responded to this survey may not have been involved in the care of the patients who responded to the patient survey.

Both surveys are included in the online supplementary file 1. The surveys were pilot tested on a group
of gastroenterologists (n=6) to check the consistency and appropriateness of the questions designed by the investigators.

Statistical analysis
Data were analysed using Microsoft Excel V.2019 (Microsoft, Redmond, Washington, USA) and Stata V.16. Categorical and ordinal variables were summarised using counts and percentages, and continuous data are presented as medians and IQR. Categorical data were analysed using $X^2$ tests, and one sample paired t-test was used to compare preferences between different modalities of consultation. Variables identified as significant identified by the univariate analysis were used to build a multivariate model to assess the effect of each potential confounding factor and to determine independent and significant factors. Linear and logistic regression analyses were used as appropriate to determine independent and significant factors. Dependent variables were modes of consultation and independent variables included demographics, disease characteristics, medications and BSG risk group. All tests were two-tailed, a p value of less than 0.05 was considered statistically significant.

RESULTS
Patient survey results
Of the 1000 surveys sent, a total of 210 patients completed the survey (160 online and 50 paper surveys), yielding an overall response rate of 21%. The median age of patients was 55 years (IQR 23), with the majority of replies from women (53.8%) and of White ethnicity (84.3%) (see online supplemental file 1, results section). One hundred seven (51%) patients had their telephone consultation with an IBD consultant, 49 (23.3%) with a nurse specialist, 24 (11.5%) with a registrar and 30 (14.3%) were unsure who led the consultation.

HCP survey results
A total of 114 responses were provided from HCPs across the UK, which included 51 (44.7%) consultants, 53 (46.5%) IBD specialist nurses, 6 (5.3%) registrars and 4 (3.5%) fellows. Pre-COVID-19, 51% were already undertaking telephone consultations, of which 39% (24) were doctors and 64% (34) were IBD nurse specialists. Two per cent (two) were doing video consultations, undertaken by consultants only. During COVID-19, there was a clear shift towards telephone-based consultations with 88% of HCPs conducting telephone consultations. For new patient consultations, there was a significantly greater use of telephone (53%), video (1%) or a mixture of consultations (39%) compared with F2F alone (7%); $p<0.001$. There was also a significantly lower use of video consultations over telephone consultation or mixture of consultations ($p<0.001$). For follow-up patients, there was a significantly greater use of telephone (69%) over F2F (2%) or mixture of consultations (27%); $p<0.001$. There was also a significantly lower use of video consultations (2%) over telephone consultation or mixture of consultations ($p<0.001$). If F2F consultations were arranged, 61% of HCPs had a maximum limit on how many patients could be seen in a morning or afternoon clinic with the average number being four patients. Local trust policies prohibited 15% of HCPs from seeing any patients F2F.

Telephone consultation versus F2F
A total of 66.7% thought they had been thoroughly assessed over the phone with 82.9% agreeing that their concerns were adequately addressed over the phone. Despite this, only 42.4% rated their telephone consultation as ‘excellent’. A total of 70.5% (148) patients said their telephone consultation was ‘just as good’ as an F2F consultation, while 11.9% (25) said it was overall better and 17.6% (37) said it was overall worse (figure 1A). There was a mixed response from HCPs of whether telephone consultations were preferred over F2F, with 52.6% stating telephone consultations were worse than F2F and 43.9% stating they were ‘just as good’ (figure 1B). Clinicians (consultants, registrars and fellows) thought telephone consultations were worse than F2F (67.2%), as opposed to nurses (35.8%). However, neither group thought telephone consultations were particularly better than F2F (4.9% clinicians vs 1.9% nurses).

Consultation preferences and future intentions
Overall, patients preferred F2F consultations over telephone or video consultation ($p≤0.01$). F2F consultation was consistently preferred over different combinations of telephone, F2F or video consultations ($p<0.001$). Telephone consultation alone or combination of telephone and F2F was however preferred over video consultations alone or a combination of video and F2F consultations ($p<0.001$). Fifty per cent indicated they did not want the option of a video consultation (see figure 2A for patients’ preference for consultation type).
Fewer HCPs want to increase their telephone consultations activity post-COVID-19 (figure 2B); p<0.001. However, significantly fewer want to use F2F alone (5.3%) for follow-up of patients with IBD, preferring the use of telephone (20.2%) or combinations of telephone/F2F (22.8%) or telephone/video consultations (4.4%); p<0.05. A total of 34.2% of HCPs intend to use a combination of all three consultation modalities, with 63% indicating they intend to use video consultations in the future.

Caucasian ethnicity was found to positively correlated (R=2.2, p=0.028) and patients within the high-risk group negatively correlated (R=1.01, p=0.04) with a preference for telephone consultation. Older age (R=0.03, p=0.02) was positively correlated with a preference for combined video and F2F consultation. Older age (R=0.03, p=0.01) and patients with a university degree or higher qualification negatively correlated (R=−0.81, p=0.04) with F2F consultations. Having no formal qualification positively correlated (R=0.98, p=0.02) with F2F consultations.

Consultation preference based on health status
Table 1 shows patients’ preference depending on their health status. Unless their IBD was stable, they preferred an F2F consultation, particularly if they were having a flare or needed a change in medication. Video consultations were not preferred in any scenario.

### Video consultations
A total of 46.8% of those over the age of 50 years were agreeable to having future video consultations. This is compared with 53.3% of those aged less than 50 years (p=0.86). A total of 71.2% of individuals with a university degree or higher were agreeable for a video consultation as opposed to 42.7% without a higher qualification (p=0.9). A total of 46.6% were agreeable for a video consultation in the white population, whereas 67.7% agreed in the Black, Asian and minority ethnic (BAME) group (p=0.97). Regardless of age, education or ethnicity status, the top ranked consultation preference remained F2F, followed by telephone and then video.

### Barriers and enablers
Although 71.8% of patients agreed that learning to use telephone or video services would be easy for them and 76% were highly willing to use the telephone services in the future, 22.4% were concerned that telephone services were not adequately secure and 45% were not comfortable discussing their medical problems over the phone, with no difference between the white population (43.75%) and the BAME group (41.9%). The reasons behind this listed by patients were the difficulty in building a rapport with the doctor, missing body language cues and the difficulty in articulating their problems over the phone. There was also mention of specific barriers, such as hearing and learning disabilities and poor internet/phone signal in their homes/workplace. A further 47% stated they did not think they could have the same relationship with their doctor over the telephone as opposed to F2F. Eleven per cent admitted that telephone services would be difficult for them as English was not their primary language.

Figure 3 discusses HCPs’ overall experience with telephone consultations and difficulties encountered with telephone consultations. Although the majority of HCPs (86%) were happy to continue to use telephone consultations in the future and thought they were a satisfactory way of conducting a clinical review (79.8%), 71.9% felt the breadth of discussion was greater with F2F than telephone consultations. Moreover, 43% did not think clinics ran quicker with telephone versus F2F. The most common difficulty encountered was poor reception with the line cutting off or going directly to voicemail.

### Advantages and disadvantages
The most common advantages to telephone clinics that patients described was the reduced travel and wait times, while also saving on car park fees. Others commented on not needing to take time off work or arrange childcare. The most common disadvantage

| Table 1 | Patients’ preference of consultation based on their health status |
|---|---|---|---|---|
| If patients were ill with a flare of their IBD | Telephone | F2F | Video | Remote review by clinical portal/email |
| If patients were stable and needed routine review | 28.6% | 61.9% | 9.5% | N/A |
| If a change in medication was required | 42.4% | 49% | 8.6% | N/A |

F2F, face-to-face; IBD, inflammatory bowel disease; N/A, not applicable.
Education

listed by patients and HCPs was the inability to carry out a physical examination. Patients also complained that they still needed to come into hospital to have blood tests done while HCPs had privacy concerns of being in a noisy office or being interrupted during clinic.

DISCUSSION

The BSG has recently released recommendations for restarting outpatient appointments for gastroenterology and hepatology patients post-COVID. They propose to continue to use telephone and video consultations in the future with a decrease in F2F consultations. This is in keeping with the responses from the HCPs from our survey but is in contrast to our patient cohort preference. Virtual clinics can offer many benefits including potential savings to the NHS such as staffing and administrative costs. It can also provide patients with easier and more frequent access to their healthcare providers. This could have positive effects on compliance and communication and overall improvement in the doctor–patient relationship.

Despite this, many of our patients still preferred the more personal nature of an F2F consultation. There could be multiple reasons behind this sentiment. Rutherford et al found that 35% of patients would be uncomfortable sharing personal information about their health in a virtual setting, which is in keeping with our results. Greenhalgh et al demonstrated that virtual consultations work better when the patient and clinician know each other. However, this may not be possible as patients with IBD are not always seen by the same HCP but rather are managed by a team of specialist consultants, IBD specialist nurses and rotating trainee specialist registrars. This is an important factor considering 14% of our patients were unaware of who led their phone consultation and highlights the necessity of good communication when undertaking telephone consultations. These barriers may potentially be managed better by the implementation of video consultations, which can provide additional visual information, diagnostic cues and therapeutic presence. Randomised trials have demonstrated video consultations to be associated with higher satisfaction among patients and staff with no difference in disease progression, no substantial difference in service use and lower transaction costs compared with traditional clinic-based care. However, the majority of these studies were underpowered with a selected patient population of chronic, stable conditions. These results would not be generalisable to our IBD cohort who can present with acute and potentially serious illnesses. Thus, video consultations, if implemented, should supplement and not replace telephone or F2F consultations.

This paper is the first to highlight the views and opinions of patients and HCPs on the rapid implementation of non-F2F consultations for patients with IBD during COVID-19. Our study has highlighted two important points, one from the patient’s perspective and the other from the clinician’s perspective. First, although patients would prefer F2F consultations, they would continue to use telephone consultations if offered but video consultations were the least preferred modality. This is in stark contrast to our HCPs’ response (63%) who intend to increase the amount of video consultations in the future. However, apart from 2% of our HCP population, video consultations have not yet been trialled by either patients or HCPs. Thus, until this mode of consultation is enacted into clinical practice with further comprehensive analysis, we cannot definitely conclude on its future use.

The second point is that clinicians are moving away from a single modality of consultation and rather intend to combine a mixture of F2F, video and telephone consultations for the future. Whereas previously, all patients were being seen F2F regardless of routine, new or urgent follow-up, consultation modality should now depend on several factors. This includes whether it is a new or follow-up patient, the need for a physical examination, the patient’s health status and patient’s specific needs such as hearing impairment or language difficulties. As each patient is unique with their own set of complexities and needs, one must triage each patient individually to create a balance between patients’ preferences and clinicians’ intentions with a cost-effective and resource-effective NHS service.
CONCLUSION

Virtual clinics are not a novel approach to delivering outpatient appointments in healthcare. However, IBD is a complex subspecialty with patients often requiring a multidisciplinary management approach and this needs to be taken into consideration when adopting non-traditional consultations. Although HCPs plan to continue with virtual clinics in the future, this should be balanced proportionately with F2F clinics according to patients’ clinical needs and preferences.

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