



■ GENERAL ORTHOPAEDICS

Embracing virtual outpatient clinics in the era of COVID-19

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The response to the COVID-19 pandemic has raised the profile and level of interest in the use, acceptability, safety, and effectiveness of virtual outpatient consultations and telemedicine. These models of care are not new but a number of challenges have so far hindered widespread take-up and endorsement of these ways of working. With the response to the COVID-19 pandemic, remote and virtual working and consultation have become the default. This paper explores our experience of and learning from virtual and remote consultation and questions how this experience can be retained and developed for the future.

Cite this article: *Bone Jt Open* 2021;2-5:301–304.

Keywords: Virtual outpatient clinic, Virtual fracture clinic, Service redesign, COVID-19

Why now?

The response to the COVID-19 pandemic has changed how we structure and provide healthcare services for patients.^{1,2} Investigations and treatments have been prioritized, deferred, and cancelled to allow clinicians and systems to focus resources on the immediate priorities of addressing the needs of patients directly affected by the pandemic, and scaling up critical care capacity in order to care for those who may be affected in the future.³ Partnerships have been brokered across government and independent healthcare providers. Perhaps the most exciting development has been the acceleration in the adoption of technology in healthcare settings. A very obvious manifestation of this is the use of telephone and video software to facilitate virtual consultations.^{4,5} This has been almost universal and across multiple specialties,^{6,7} even where in many circumstances it was felt previously that this could not be done safely or effectively.

As we have adopted the technology to maintain contact in a time of social isolation, we have become more accepting of it in other aspects of our lives. We have found ourselves in a situation where patients are being advised to reduce unnecessary attendances at hospital. Reducing footfall on hospital sites should help to reduce nosocomial infection, protecting both patients and staff. Virtual consultations offer potential tools through which we may still be able to offer care remotely and also identify those

patients who do need to attend hospital in person.

The idea of virtual consultation is not new,⁸ but the response to the COVID-19 pandemic has presented a unique opportunity to embrace a different way of thinking, framed by new and changing risks and priorities. There have been many questions. Why do it? Surely, you must see the patient? How do you know what you have missed? Must it not be safer, easier, and better for the patient to attend a traditional face-to-face consultation?

The traditional face-to-face model has many benefits. When it is carefully thought out and considered, it can provide an efficient way of addressing patient needs, sometimes needing only 'one stop' for the patient to get a clear diagnosis and a treatment plan. It allows resources and expertise to be concentrated in one place, and being in the same room should facilitate easier communication between patient and clinician.

What has been our experience of virtual clinics?

The discussion about the value of virtual outpatient clinics has often been based around aspects of efficiency: patient numbers discharged directly; new to follow-up patient ratios; reduced numbers of outpatient visits or follow-up attendances; and financial costs and economic evaluations demonstrating potential savings.⁹ We suggest that viewing the virtual outpatient model from only this

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doi: 10.1302/2633-1462.25.BJO-
2020-0176.R1

Bone Jt Open 2021;2-5:301–304.

point of view discounts the notable benefits that the model can offer and also the considerable effort and investment needed to make it a success. Our previous work, and the work of others, has shown that the virtual outpatient model can be used to drive the other domains of quality and not just efficiency or cost savings.^{6,8,10}

We adopted a virtual outpatient model for hand and wrist injuries in 2016 and have modified and tailored this service over the years. Overall, patient and clinician feedback has been overwhelmingly positive and our experience of developing a virtual outpatient fracture clinic over the past four years has been iterative, learning along the way. We did not necessarily expect this. We worried that some patients, possibly older ones, would not be keen to embrace technology-based solutions. This proved to be unfounded. We were concerned that patients who were discharged directly with advice for self-care might feel dismissed or not taken seriously. We worked to develop a range of educational materials and resources to support them and we made sure that they were signposted to how they could re-engage with the system should this be needed. We worried about safeguarding concerns and those patients who might not do well without the face-to-face contact of a traditional outpatient visit. We determined that the virtual model should not be the only option and that a small subset of patients would still need to attend a traditional clinic appointment.¹⁰ Focusing on the benefits for the patient, the clinician, and the system allowed us to engage with key stakeholders to establish how and why a virtual fracture clinic could be deployed to maximum effect and benefit for all.

We did not start with universal consensus. The convention and wisdom has been that the traditional face-to-face outpatient clinic is the gold standard. Different groups had strongly held views and beliefs as to the risks, potential benefits, and challenges of a virtual model. We adopted a quality improvement methodology in order to agree shared aims and to recruit and engage a stakeholder group.^{8,10}

The hand and wrist surgeons and therapists initially drove the change based on their experience of delayed patient treatment, poorly coordinated pathways, and reports of patient dissatisfaction. Acute referrers in the emergency department and urgent care centres were initially reluctant to lose the oversight and reassurance that they had by knowing that a referral had been actioned and translated into a scheduled face-to-face appointment. The referral was seen as a visible, obvious, and auditable transfer of care. Some referrers reported that moving to an electronic referral system with the option for direct discharge felt like a blurring of this process and of the responsibility so that it felt less clear when or if the patient had been fully handed over. As we worked together to co-design the process and system, the referring teams began to develop trust in the process and

the system. Again, having regular stakeholder meetings where feedback was offered and acted on was important for the development of trust and confidence.

Patients were overwhelmingly positive about the potential for change and improvement. They remained cautious about the detail and wanted to be reassured that they could re-engage with the clinic should they need to. We agreed on the overarching shared aim to improve the quality of care for patients with hand and wrist injuries attending our hospitals and we adopted the strapline, 'the virtual fracture clinic means that patients see the right person for the right treatment at the right time'. We sought to remove the traditional gatekeeper function of traditional face-to-face clinics so that patients no longer need to routinely attend such a clinic in order to access expert healthcare or information.

Patients did report that they were confused if given one message or diagnosis when first assessed in the emergency department and a different message or diagnosis following a virtual consultation. This meant that they had questions. We recognized that we needed to give time and opportunity to allow patients to ask questions and to get clear and definitive answers. Even more challenging was the need to provide clear communication with the primary care physician and team as to how the patient pathway had changed, the safeguards in place, and how the system could be accessed for advice and guidance.

We have adapted, providing a more individual service for our patients, retaining a mixed economy which incorporates the virtual outpatient clinic with the facility to see patients in a face-to-face environment when required.¹⁰ We believe that this model can be deployed for most clinical situations. For many patients there is no need or benefit in attending a hospital face-to-face appointment in person. Even where there is a good reason for a face-to-face attendance, the virtual model can help to streamline and direct this. In some circumstances a virtual outpatient clinic can be used to select patients for subsequent investigation, treatment, or a traditional clinic appointment. In other clinical scenarios, patients may benefit from an initial face-to-face appointment, especially if this allows clinical assessment and diagnostic investigations in one visit. Follow-up can then often be scheduled using virtual means.

It is very clear from the published work around virtual outpatient clinics that there are associated costs and that starting a virtual model requires some investment.^{9,11} Exactly how much investment depends on existing local infrastructure and needs. We won a project grant from the National Institute for Health Research Collaborative for Leadership in Applied Health Research and Care (NIHR-CLAHRC) which provided pump priming investment as well as improvement and project support and expertise. Ongoing costs had to be justified and met internally. This meant careful consideration over how we

delivered our service and which parts were essential and which might be considered optional. Although efficiency and cost savings were not the only or the most important metric, they had to be understood and explained.

The literature shows that virtual outpatient services are delivered in different guises by consultants or experienced extended role non-medical clinicians.⁵⁻¹⁰ We trialled both and settled on a consultant-delivered model in order to release the expertise of a skilled hand therapist back into the clinical team, seeing and assessing patients. Decisions about the best way of using consultant time also needed to be taken so that maximum benefit could be achieved. We moved from telephoning all patients following a virtual outpatient clinic to a position where the consultant would telephone only those patients discharged directly following the virtual clinic. We aimed to automate as much as possible of the process and communication to reduce the time commitment for the consultant reviewer, using text and email messages as the default mode of communication.

In obtaining benefits and efficiencies for one part of the system it is important to be aware of the effects and impact on other aspects of the system. We recognized that by directing patients to the hand therapy service for treatment from the virtual fracture clinic we would not be changing the number of patients being treated by the hand therapy team. These patients simply had their referral expedited and avoided the need to attend a fracture clinic. We did recognize that we were changing the acuity of the patient group and the time of presentation to hand therapy such that the team might require extra resources. Similarly, we were conscious that patients who were discharged directly following a virtual clinic review might simply attend their general practitioner or another hospital to obtain the face-to-face consultation that they may feel that they needed and did not have. We undertook a study to follow up and review all patients discharged directly in this way so that we could make this assessment and reassure ourselves that in adopting a virtual outpatient model we were not simply transferring workload to other parts of the system.

Where are we now?

Over the last four years we have received referrals for and treated 27,648 patients via our hand and wrist virtual fracture clinic pathway. We subsequently offered 60% of patients a face-to-face appointment in a traditional outpatient clinic. Of the remaining patients, 20% were seen and treated by a specialist hand therapist and 20% were discharged directly from the virtual clinic with advice and education.

The acceptability of a virtual outpatient model has been demonstrated, even more so since the COVID-19 pandemic.¹¹ Necessity has helped to develop confidence in the model for staff and patients. In March

2020 our hospital adopted the virtual model for all fracture care and groups. This involved the rapid adoption of the existing processes for referral, communication, and appointments. This meant that the messages and processes implemented for the hand and wrist pathway had to be replicated for other groups without the luxury of time and the same level of patient and stakeholder scrutiny and support. Having a pre-existing model of care for hand and wrist injuries helped. The model is well established but there are still a few patients who, for a number of reasons, prefer to be treated in a traditional outpatient model. We have continued to provide for this and we also facilitate contact with patients with questions or concerns via email or telephone. Despite continuing to advertise these routes of communication the numbers of patients using them is very small. The email service is monitored and run by a consultant while nurse trauma coordinators can be contacted during the daytime by telephone.

The idea of moving the senior experienced decision-maker closer to the emergency department means that patients are streamed correctly to receive the correct treatment from the outset. The two most important interventions that we identified which allowed us to expand our service to all fracture groups at the start of the pandemic were communication and education for patients and for staff. Communication with patients ensured that they understood the planned pathway, what was likely to happen to and for them, and when. This informed their expectation and avoided unnecessary worry as well as phone calls and visits to the hospital. Spending time to inform and educate referring teams meant that they understood the pathway and also the importance of treating the electronic referral as an important, and sometimes the only, clinical communication. Producing an informative and high-quality referral is essential for the success and safety of a virtual model.

Looking ahead: Driving quality and not just reducing costs

There have always been patients who would prefer not to attend the hospital for a number of reasons. The COVID-19 pandemic has aligned this patient preference with a strong imperative to reduce the visitor footfall on hospital sites and to protect or 'shield' potentially vulnerable patients from the risk of hospital-acquired illness.² The assessment of risk and benefit has changed as a result of COVID-19 but it would seem sensible that if and when we 'return to normal' that we retain the best of what we have learned and developed over this time.

There are challenges for the virtual outpatient model. It can appear distant. It may be difficult for it to appear caring. Patients need to be able to clearly identify who is in charge of and responsible for their care. It is important that patients and other clinicians involved in their care

understand the pathway, what to expect, and when. Patients need to know how to get in touch and access help. Human and system error need to be accounted for, and patients need to understand how they can expect any problems to be addressed.

Despite these challenges, the virtual outpatient model offers a number of opportunities. The chance to step back and examine the way that we provide services. The chance to reassess risks and priorities from the point of view of the patient and to co-design services with patients. It has been tradition and convention that healthcare is centred on the hospital and while it is certain that some patients do need to attend outpatient clinics in person, many patients are routinely reviewed or appointed with little consideration as to whether there is any real benefit for the patient. Being forced to re-examine this should be good for care. For now our service is still consultant-delivered but we are exploring the roles that extended scope clinical practitioners as well as surgical trainees could play.

So, where next? Reverting to how we did things before COVID-19 should not be the default position. We have been challenged to think and work differently and the virtual outpatient model presents a viable option with considerable benefits for the patient and the system. There really should be no cause to look back. The challenge is how best to use virtual tools to deliver a model of care that is and also feels superior to what we had before. The imperative should still be to drive quality and to improve care. The virtual model provides part of the answer but will not completely replace the need to see some patients face-to-face.



Take home message

- Virtual consultations can provide a reliable means of establishing and maintaining contact with patients during periods of social distancing and isolation. Nevertheless, they are not suitable for everyone or every situation. They should be considered a (good) option but cannot completely replace the need for some face-to-face consultations and interactions.
- The evaluation of virtual models of care should not be focused solely on economic considerations. Aspects of quality and patient experience are also important.
- The processes and governance around how care is provided through a virtual model need to be carefully established so that they are clear to patients and clinicians.
- We recommend an iterative approach to establishing virtual outpatient services, especially where these are set up rapidly. Taking time to review processes, touch points, patient and staff information, as well as messaging, will help to ensure that patients and staff receive correct information, have reasonable expectations, and retain confidence in their treatment.

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- G. Lee, O. T. Clough, and E. Hayter are joint first authors.

Funding statement:

- No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article

Acknowledgements:

- We recognize and are grateful for the efforts and significant contributions of the Virtual Fracture Clinic Project group as well as the wider stakeholder group including our patient representatives

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