

Novel Clinics and their Effect on the Elective Orthopaedic Waiting List

X. van Heerden, C. Jansen, S. Corcoran, A. Price, N. Kotze, F.E. Rowan, M.S. Cleary

Department of orthopaedic surgery, University Hospital Waterford, Co. Waterford, Ireland

Abstract

Introduction

In 2017, there were more than 60 000 on the waiting list to be seen in an Orthopaedic clinic in Ireland, 11% of which being at our institution. As the ratio of orthopaedic surgeon to general population remains under-resourced in Ireland (at less than half the internationally recommended average) an exponential increase in waiting times for elective orthopaedic clinics has been observed, and exacerbated post pandemic.

With the aid of technological advancements, UHW has sought alternative pathways to improve the patient management of orthopaedic conditions. In 2017, alternative clinics, in addition to the traditional clinics, were introduced to decrease the number of patients on the elective waiting list. These clinics included an evening consultant delivered clinic, a musculoskeletal physiotherapist led triage clinic, and a virtual fracture clinic; all of which had an impact on the elective waitlist either directly or indirectly.

Aims

This retrospective study highlights the impact of the novel clinics and its impact on waiting lists in an under-resourced system, which could be replicated to serve other departments throughout the Irish health system.

Methods

A retrospective review of all the combined clinics and their effect on the elective waitlist was performed from September 2017 to December 2022. New patients seen, discharge rates and onward referrals to traditional in-person clinics were recorded. Waiting list statistics pre and post novel clinic introduction were recorded using data collected from the National Treatment Purchase Fund (NTPF) website, to assess the outcome of the new clinics.

Results

A total of 40 805 patients were seen in clinics during this time, 75% of which was seen in the novel clinics. About half of these patients were triaged to attend a virtual fracture clinic, 55% of which were successfully discharged not needing further orthopaedic follow up. The musculoskeletal and twilight clinics removed 16% and 4% of patients from the waiting list, respectively.

During the study period there has been a 19.66% reduction in our waiting list overall and a 94.15% reduction in patients waiting 18 months or more for a clinic appointment at our institution.

Conclusion

The introduction of novel clinics has played a major role in reducing the number of patients on the elective orthopaedic waiting list. With continued timely implementation, patient waiting times can continue to be effectively reduced.

Introduction

In 2017, there were more than 60 000 on the waiting list to be seen in an Orthopaedic clinic in Ireland, 11% of which being at our institution. The referral pathway for orthopaedic patients either stems from the emergency department or via GP referral. Following assessment, the patient would either be admitted for surgical intervention or discharged to follow-up at a traditional fracture clinic. As the ratio of orthopaedic surgeon to general population remains under-resourced in Ireland (at less than half the internationally recommended average) an exponential increase in waiting times for elective orthopaedic clinics has been observed, and exacerbated post pandemic.

With the aid of technological advancements, University Hospital Waterford has sought alternative pathways to improve the patient management of orthopaedic conditions to improve the long waiting times for outpatient elective orthopaedic appointments. In 2017, alternative clinics, in addition to the traditional clinics, were introduced to decrease the number of patients on the elective waiting list. These clinics are designed to decrease time spent by surgeons on assessing conditions that ultimately did not require surgery, by triaging them to a more suitable initial assessment and instituting a faster management plan. They included an evening consultant delivered clinic, a musculoskeletal physiotherapist led triage clinic, and a virtual fracture clinic; all of which had an impact on the elective waitlist either directly or indirectly.

In reviewing the impact of this service alteration, the clinics can be divided into two coherent groups; those with an indirect impact on the elective waiting list, including the virtual fracture clinic (VFC), and those with a direct impact, such as the musculoskeletal (MSK) physiotherapist led clinics, normal elective clinics and Twilight clinics.

The concept of the VFC is not new to healthcare systems, and was initiated in the UK in 2014¹. After its implementation, there has been an evident decrease in the number of patients awaiting an appointment in general orthopaedic out-patient clinics. After being seen in the A&E, patients with non-operative conditions² or minor injuries can be discharged and

consulted virtually, via a telephonic consultation, with the help of a specialised VFC team³. Not only is it described as a time and cost effective way to treat patients with minor trauma and orthopaedic related injuries, evidence has also shown that patient satisfaction is also higher.^{2,4,5,6}

The MSK clinic is a predominantly advanced practitioner physiotherapy (APP) driven clinic. Fennelly explains that patients with elective orthopaedic concerns are seen by a physiotherapist who is specialised in specific presenting concerns, for example hip, knee or shoulder pathology. Patients are assessed, and treated conservatively with physiotherapy for a number of months, after which the patient is then reassessed by the APP.⁷ As per a national Irish audit in 2018 less than 20% of 13 981 patients, who were previously awaiting elective orthopaedic clinic dates, further required a consultant doctor referral after attending the MSK clinic.⁸

In contrast to the MSK clinics, the Twilight clinics are consultant led clinics which occurred episodically and was funded by the National Treatment Purchase Fund (NTPF). Orthopaedic consultants, and other specialised personnel including nurses and plaster technicians, stay after hours to attend to patients who are next to be seen on the elective waiting list.

The aim of this paper is to provide a complete overview of the effect that these additional clinics have on our elective orthopaedic clinic waiting list.

Methods

Retrospective data collection on elective outpatient metrics was performed from September 2017 to December 2022 as the VFC and Twilight clinics was initiated during this period. The MSK clinic has been part of UHW for several years but was redesigned in 2020 to improve efficiency.

The NTPF fund is a useful platform providing information on national elective waiting lists as well as the elective waiting lists at UHW. The NTPF allows us to gather information on the waiting list volume and times both nationally as well as per institution and speciality.⁹ This information was helpful to evaluate the impact of these novel clinics directly on our local waiting lists but also allowed us to contextualise it further on a national level. NTPF and locally gathered data was correlated and reflected on multiple graphs to illustrate the effect of each clinic as well as the combined clinics. Unfortunately, a cyber-attack in June 2021 resulted in a data breach, as well as gaps in national digital platforms, which resulted in incomplete data for the month of June 2021.

The data from the MSK, VFC, elective and twilight clinics was gathered yearly by the orthopaedic business manager. This information forms part of the annual orthopaedic report.

The data from the VFC was collected prospectively and data from the remaining clinics was collected retrospectively using the In-Patient Managing System (IPMS). These sets of data along with the data from the NTPF were used to appreciate the impact of the novel clinics.

For the MSK clinics, the number of new attendances and discharged patients were documented. During the period of January and May 2021, some patients were consulted virtually. These patients were added to the in-person consultations, which allowed the calculation of the total number of patients seen in this clinic.

The data captured in the VFC included the total patients seen during the set period, the location where the patient initially presented, and the outcomes of the consultation (e.g. Referred on for further follow up, or discharged). With this, the total number of patients seen and discharged from the clinic was calculated.

Furthermore, the total amount of patients that arrived for the appointment, those who did not arrive, and those discharged from the clinic was collected from the Twilight clinic data set.

Results

Within the period of 1 December 2019 to 31 December 2022 a total of 20 418 referrals were made to the VFC at UHW. Of these referrals, 5405 (26,4%) was from Wexford general hospital A&E, 5541 (27.1%) from UHW A&E, 5171 (25,3%) from St Lukes Hospital in Kilkenny and 4291 (21%) from South Tipperary Hospital. During this period, 8072 (39,5%) patients were referred onto the VFC and 11 329 (55,4%) patients were discharged without the need of an inpatient consult. 297 (1,5%) patients were booked into surgery as they were inappropriately referred to the VFC. The remaining 735 (3.6%) referrals were duplicates.

During the period of 1 September 2017 to 30 September 2022, 6604 patients were seen in the MSK clinic, 6261 (95%) were face-to-face consults and 343 (5%) were consulted virtually. Of the face-to-face consults, only 580 (9%) of patients required further review in the elective orthopaedic clinic and a total of 6024 (91%) patients were discharged from the MSK clinic.

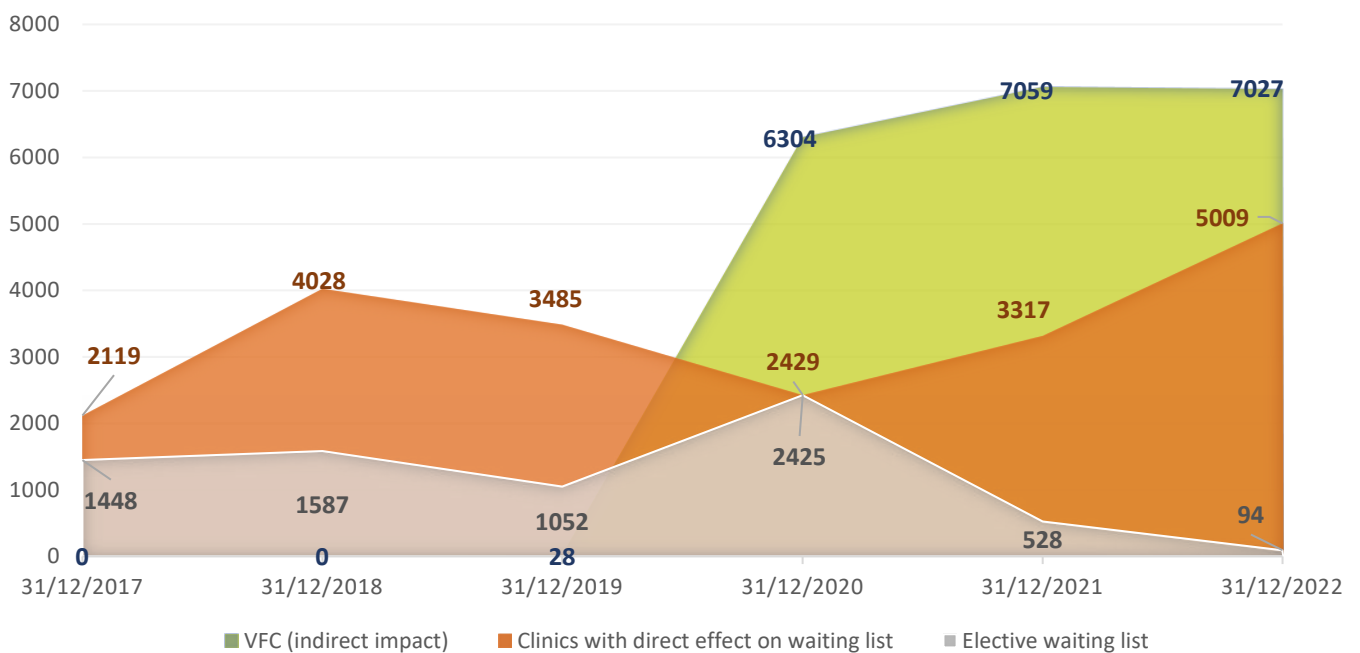
Since initiation of the twilight clinic in October 2021 a total of 1438 patients from the elective waiting list were seen. Only 89% (1162 patients) were seen by an orthopaedic consultant during this time as 158 patients (11%) did not arrive to for their appointment.

In addition to the novel clinics, a total of 12 345 new patients were seen in the original elective clinics during this period, thus removed from the elective waiting list.

In summary, as seen in table 1, after the initiation of novel clinics, the UHW elective orthopaedic waiting list improved by 19.66% and the number of patients waiting more than 18 months decreased by 94% from 1608 to 94 patients.

Waiting list Site	Total patients on the waiting list in 2017	Total patients on the waiting list 2022	% improvement
UHW (overall)	6713	5393	19.66%
UHW waiting 18+ months	1608	94	94.15%
Ireland (overall)	61925	63645	-2.78%
Ireland waiting 18+ months	8334	6973	16.33%

Table 1: A table comparing the amount of people on the elective waiting list at UHW and nationally, pre and post initiation of the novel clinics.



Discussion

The growing and ageing population has predicted an increasing demand for orthopaedic consultations and surgery into the future. Different facilities in Ireland^{2,3,4,5} as well as the UK¹ have tried to manage their patient loads by initiating additional clinics. National elective waiting lists have become a major talking point the past decade as waiting periods have increased significantly and political focus on improving these metrics has ensured interest in developing new pathways and driving efficiencies.

As the clinics have only been initiated in recent years a decrease in the number of patients waiting 18+ Months were the first to show the effect. Since 2017 the 18+Months waiting list has decreased by 97.14% while the rest of Ireland has only decreased its numbers by 16.33%.⁹ These numbers are significant as there was a pandemic worldwide. The effect of COVID-19 on England's 52+ week's waiting list shows how a national health system could be affected with a 7016.34% increase in patients waiting to be seen.¹⁰

It is important to understand that clinics can either affect the elective waiting list directly or indirectly. The most important clinic that has an indirect effect on the waiting list was the Virtual fracture clinic as a total of 11329 patients were removed from UHWs inpatient clinics. This consultant led clinic is a fast way to clear up space in a clinic with decreasing an average of 3776 patients per year out of the inpatient clinics. This allowed for more elective patients to be seen in the outpatient clinics.

In total, the elective clinics in 2022 have a 9.14% increase in numbers seen compared to 2017. Even though this does not seem to be a significant increase, it is important to understand that the consultants are allocated to oversee the musculoskeletal and VFC clinics (during normal hours). For this reason, the twilight clinic was created. These after-hours clinics removed a total of 1845 patients from the elective waiting list, which is an average of 922 patients per year.

The musculoskeletal clinic removed 6604 patients since September 2017, an average of 1100 patients per year which makes it the largest contributor to the declining waiting list.

Looking at the distribution of patients on the waiting list from table 1, there is a significant change visible in 2022, with the 18+ Month waiting list changing from 21.79% in 2017 to 1.73% in 2022 and the 0-6 Month waiting list at 36.27% in 2017 compared to 55.72% in 2022. The change increase in the 0-6 Month waiting list is expected as more patients are seen within a shorter period of time as result of the new clinics.

Based on improvement in wait times for patients, other quality improvement initiatives have been introduced at our institution more recently which are outside the scope of this study but will hopefully contribute to better patient care by reducing wait times and improvement

management These include the acute spinal compression pathway and elective virtual upper limb clinics.

In conclusion, the novel clinics have shown to be of great benefit to our institution reducing waiting times for elective orthopaedic outpatient assessment The use of a multidisciplinary approach and is vital to address the national increasing waiting list burden on our health system. While clearly not a substitution for addressing the under resourced surgeon-to-population ratios, alterations in our traditional clinic model and basic investment in additional capacity can have a significant impact on patient care.

Declarations of Conflicts of Interest:

None declared.

Corresponding author:

Xander van Heerden,
Department of orthopaedic surgery,
University Hospital Waterford,
Co. Waterford,
Ireland.
E-Mail: xandervanheerden7@gmail.com

References:

1. Holgate, J., Kirmani, S. and Anand, B. (2016) 'Virtual Fracture Clinic delivers British Orthopaedic Association compliance', *The Annals of The Royal College of Surgeons of England*, 99(1), pp. 51–54. doi:10.1308/rcsann.2016.0255.
2. Breathnach, O. *et al.* (2018) 'Electronic referrals for Virtual Fracture Clinic service using the National Integrated Medical Imaging System (NIMIS)', *Irish Journal of Medical Science (1971 -)*, 188(2), pp. 371–377. doi:10.1007/s11845-018-1901-3.
3. Michelson, J.D. (2020) 'Corr Insights®: Are Virtual Fracture Clinics during the COVID-19 pandemic a potential alternative to delivering fracture care? A systematic review', *Clinical Orthopaedics & Related Research*, 478(11), pp. 2622–2624.). doi:10.1097/corr.0000000000001436
4. O' Reilly M. Wallace E. Merghani K; Conlon B, Breathnach O;Sheehan E; (no date b) *Trauma assessment clinic: A virtual fracture clinic model that delivers on its promise!*, *Journal of telemedicine and telecare*. Available at: <https://pubmed.ncbi.nlm.nih.gov/35285739/> (Accessed: 25 May 2023
5. Murphy, E.P. *et al.* (2020) 'Are virtual fracture clinics during the COVID-19 pandemic a potential alternative for delivering fracture care? A systematic review', *Clinical Orthopaedics & Related Research*, 478(11), pp. 2610–2621. doi:10.1097/corr.0000000000001388.

6. Cavka, B. *et al.* (2021) 'Retrospective cohort study evaluating the efficacy and safety of an orthopaedic consultant-led virtual fracture clinic in an Australian level 1 trauma centre', *ANZ Journal of Surgery*, 91(7–8), pp. 1441–1446. doi:10.1111/ans.16574.
7. Fennelly, O. *et al.* (2018) 'Advanced practice physiotherapy-led triage in Irish orthopaedic and Rheumatology Services: National Data Audit', *BMC Musculoskeletal Disorders*, 19(1). doi:10.1186/s12891-018-2106-7.
8. Napier, C. *et al.* (2013) 'A physiotherapy triage service for orthopaedic surgery: An effective strategy for reducing wait times', *Physiotherapy Canada*, 65(4), pp. 358–363. doi:10.3138/ptc.2012-53.
9. (2023) *National Treatment Purchase Fund (NTPF)*. Available at: <https://www.ntpf.ie/home/outpatient.htm> (Accessed: 25 May 2023).
10. *NHS Wait Times* (no date) *Waiting List Tracker*. Available at: <https://waitinglist.health.lcp.com/> (Accessed: 30 May 2023).