

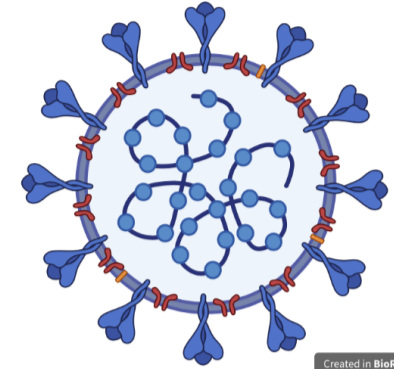
# The Role of Digital Health During the Coronavirus Pandemic

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## Introduction & Objectives

This project investigates the role of digital health in providing safe, effective, trauma orthopedic care during the Coronavirus



pandemic, focusing on the pre-existing Virtual Fracture Clinic (VFC) service in Victoria Hospital, Kirkcaldy (VHK). The VFC was suspended during the first wave of the pandemic but was active during the peak in January 2021.

It has been shown the most important modification we can make to prevent the spread of Coronavirus as individuals, but also healthcare providers, is to reduce the number of people we are physically encountering (1,2). VFC's have allowed for increased social distancing while maintaining high standards of patient care. VFC's have been shown to be effective in the management of minor orthopedic injuries, saving money and time for both the health service and patients (1,2).

## Methods

January 2020 and 2021 referrals and outcomes of the VFC were collected and analysed using SPSS v.26. 635 patients were retrospectively identified from clinic lists, A&E records and electronic patient record system PatientPortal.

Standards outlined by the British Orthopaedic Association Standards for Trauma (BOAST) guidelines were used to measure outcomes and assess the pandemic's impact on this care pathway, including discharge rates, reattendance rates and immobilisation techniques. Demographics of injuries and patients were also compared.

BOAST Guidelines identified and analysed were:

- **BOAST guideline 1:** Patients presenting with a fracture should be seen within 72 hours.
- **COVID 19 BOAST guideline 7:** Use of removable casts or splints should be maximised to reduce follow-up requirements.
- **COVID 19 BOAST guideline 8:** Patient-initiated follow-up should be the default - booked appointments where unavoidable.

## Results

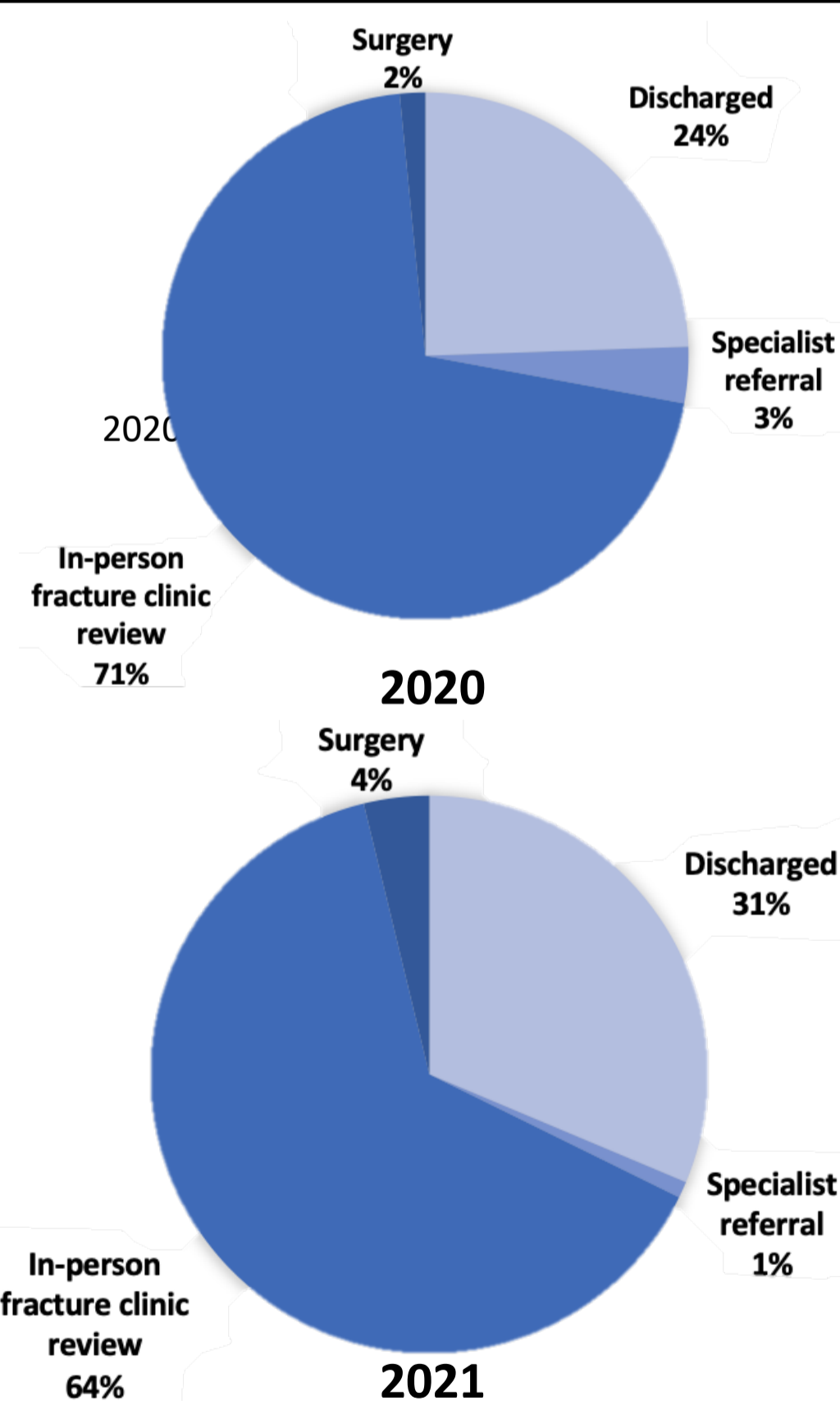
Time between hospital presentation to VFC increased by 25% during the pandemic to 3 days which was still in line with **BOAST Guideline 1** ( $P=0.001$ ).

There was a 69% increase in humeral shaft fractures ( $P=0.055$ ), and a 75% increase in distal radial fractures ( $P=0.002$ ). Decreased finger and thumb fractures were noted ( $P=0.000$ ,  $P=0.020$ ).

Figures 1 and 2 (below) illustrate outcomes of VFC.

There was an 8.7% increase in direct discharge from VFC during the pandemic ( $P=0.048$ ). This is aligned with **BOAST Coronavirus Guideline 8**. There was an 11.1% increase in physiotherapy referrals during the pandemic, this service was also moved online ( $P=0.002$ ). Specialist clinics were suspended during the peak of the pandemic, thus referral to them reduced ( $P=0.032$ ).

*Outcomes of VFC in January 2020 and 2021*

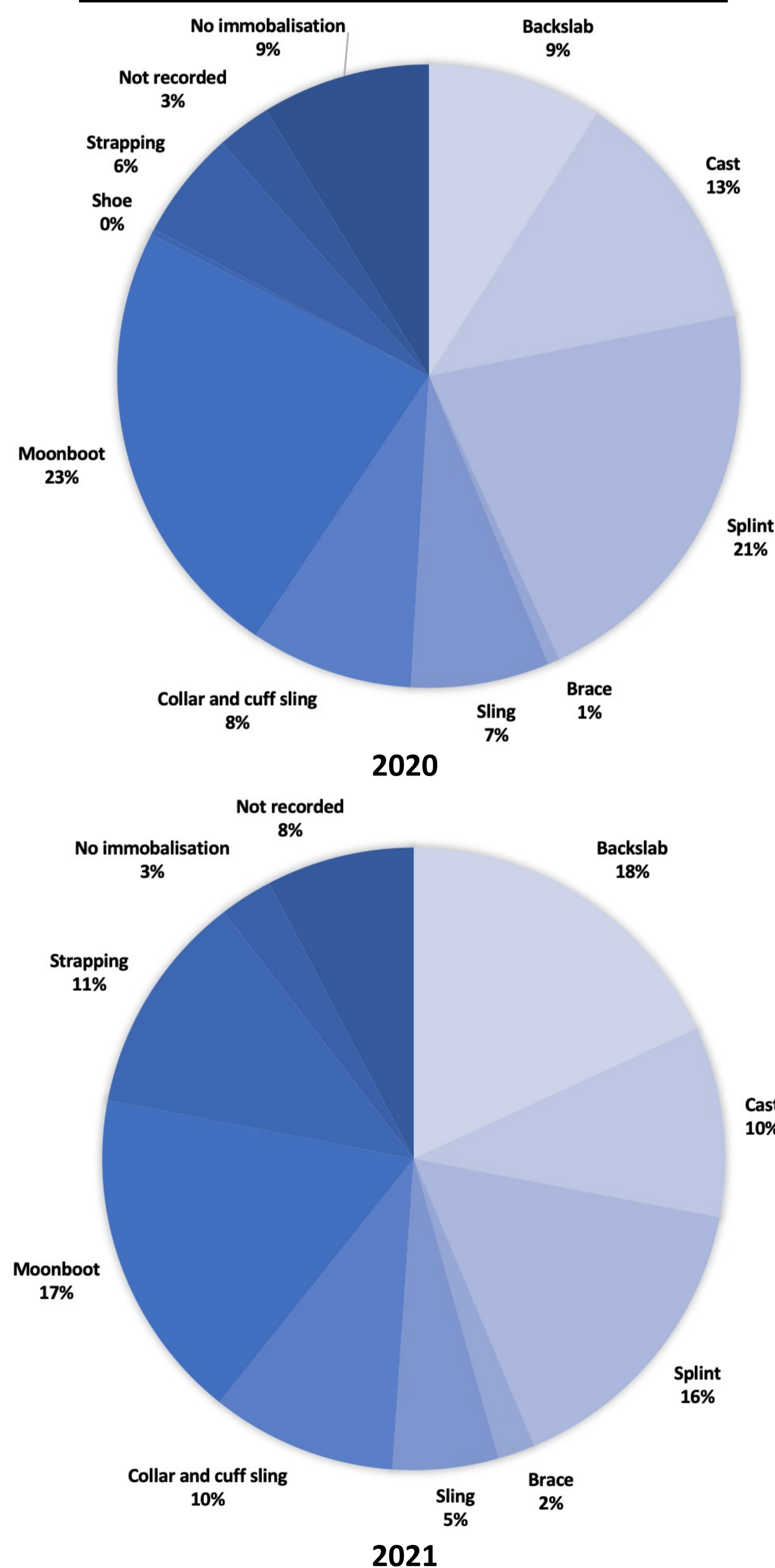


23.6% more falls from standing occurred during the pandemic's peak ( $P=0.000$ ), and 0.4% less sporting injuries occurred ( $P=0.000$ ). There was a 14.6% increase in injuries occurring at home, as patients followed stay-at-home orders ( $P=0.000$ ). There was a 7.8% decrease in patients being injured in indoor public places ( $P=0.000$ ).

There was no change in reattendance rates following discharge from VFC.

**BOAST Coronavirus Guideline 7** necessitated use of removable immobilization techniques where possible; VHK significantly increased use of removable immobilization techniques backslabs and buddy/neighbor strapping ( $P=0.0048$ ,  $P=0.000$ ,  $P=0.001$ ).

*Immobilization techniques used for VFC patients*



## Conclusions

The VFC at VHK has proved to be an efficient tool in management of orthopedic trauma throughout the peak of the Coronavirus pandemic. Alteration of this care pathway has enabled social distancing and reduced hospital footfall while continuing to provide safe and effective care to patients.

The lack of specialist clinics during the peak of the pandemic may have meant less specialist care for patients which could be negative in the longer term. VHK did, however, manage to remain within the BOAST guidelines while providing care despite injury demographics altering due to the pandemic, January is also one of the busiest months for T&O services and winter weather conditions (more prevalent in the 2021 cohort) place strain on the service even without the added pressure of a pandemic (3).

A limitation of this paper is the lack of patient insight. Future research in VHK would be wise to assess patient satisfaction with digital healthcare pathways, however, no significant increase in return rates over the time periods studied suggests a similar level of patient satisfaction. This could also, however, be due to reported public reluctance to engage with healthcare during the pandemic (3).

Moving forward in creation of a more efficient and streamlined T&O service for patients in the future, further utilization of digital health will prove to be valuable while maintaining in person examination as the gold standard for patient contact where required. In possible future pandemics, VFC's allow for flexibility in patient management as judged by a senior consultant. T&O at VHK has managed to balance resources and patient care during the pandemic and continued with a high standard of care, the VFC has been key in this.

This study will add to an existing research base and highlight key points which can allow healthcare services to proactively prepare for possible future pandemics when the service is put under pressure again.

## References & Acknowledgements

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3. Lazzarini et al., Delayed access or provision of care in Italy resulting from fear of COVID-19. *Lancet Child Adolesc Heal*. 2020;4642(20):2019-20. Images created with BioRender.com

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