


# VIRTUAL TREATMENT PATHWAYS

Mr Parag Garg




# CASE FOR CHANGE

 Current traffic in VFC ~ 2300/Month

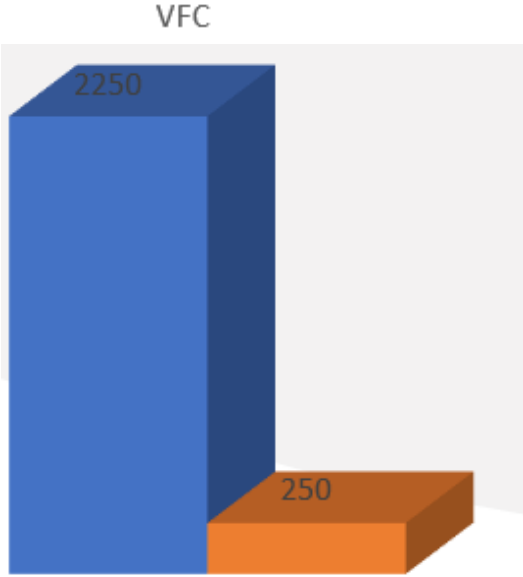
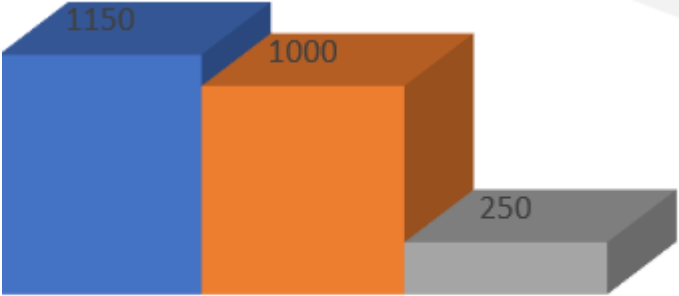
 30-40% (~1000) of them fall under the 13 VTP

 Another 10 % have no fractures reported

 F2F fracture clinic with about 2500 patients with about 20 % (500) falling under these pathways

Patient referrals / Month

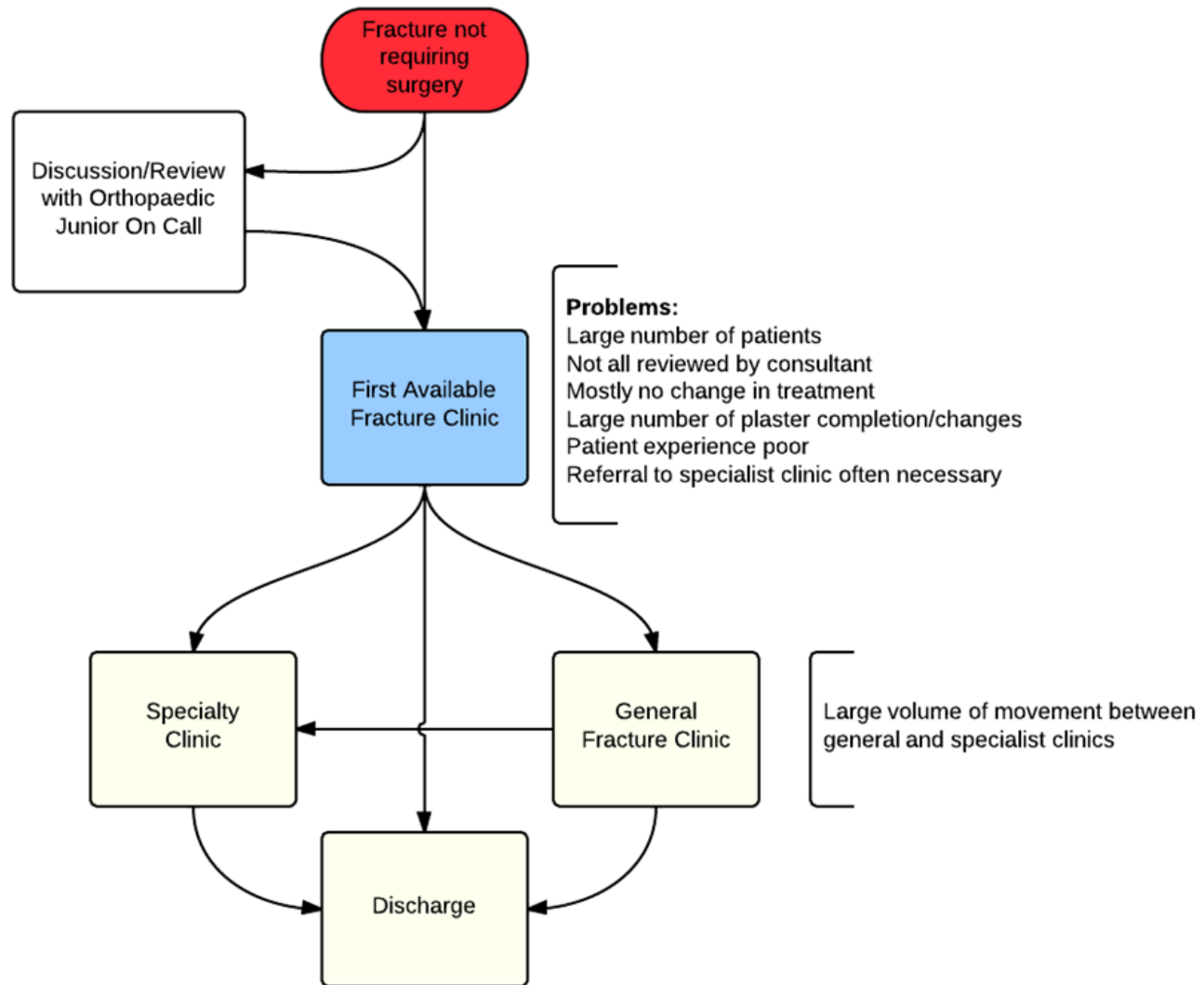
■ Non VTP ■ VTP ■ No fracture



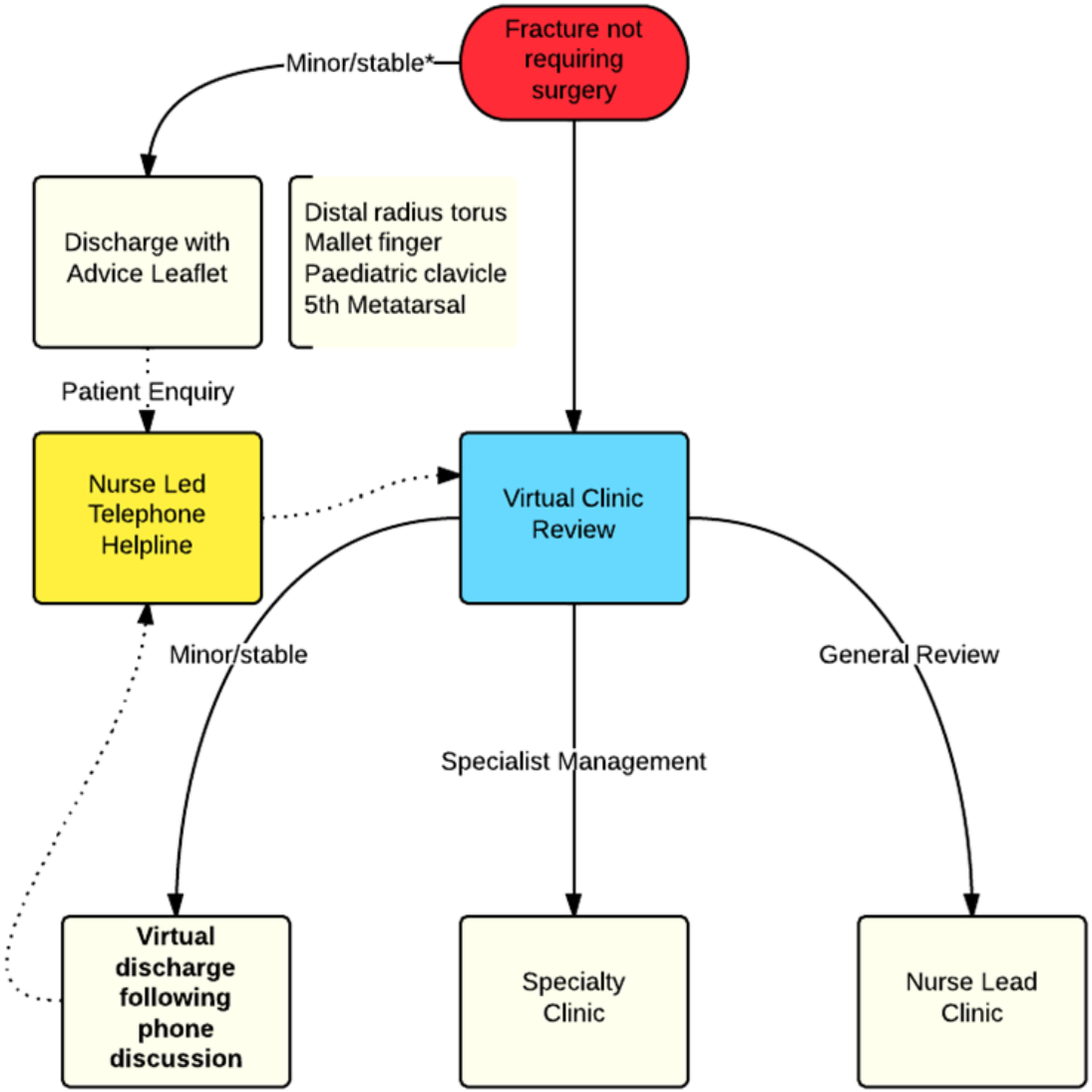
F2F



# TRADITIONAL VIRTUAL FRACTURE CLINIC SYSTEM



# VIRTUAL TREATMENT PATHWAYS



# GLASGOW MODEL

## Fracture Clinics for the Future

Fracture Pathway Redesign

INTRODUCTION PATIENT AREA PROCESS REDESIGN EVIDENCE RESULTS THE TEAM

### Presentations, Posters & Publications

#### Publications

Anderson et al. [Cost comparison of orthopaedic fracture pathways using discrete event simulation in a Glasgow hospital](#). BMJ Open 2017

Jenkins et al. [Legal Aspects of Virtual Fracture Clinics](#). JTO 2016

Jenkins et al. [Fracture clinic redesign reduces the cost of outpatient orthopaedic trauma care](#). BJR 2016

Jenkins et al. [Socioeconomic deprivation and age are barriers to the online collection of PROMs in orthopaedic patients](#). Ann R Coll Surg Eng 2016

Ferguson et al. [Fifth metatarsal fractures – is routine follow-up necessary?](#) Injury 2015

Gamble et al. [Satisfaction and functional outcome with “self-care” for the management of fifth metacarpal fractures](#). Hand (NY) 2015

Brooksbank et al. [Functional outcome and satisfaction with a “self-care” protocol for the management of mallet finger injuries: a case-series](#). J Trauma Manag Outcomes 2014

Jenkins et al. [The Glasgow Fracture Pathway](#). BJJ News 2014

Vardy et al. [Effect of a redesigned fracture management pathway and ‘virtual’ fracture clinic on ED performance](#). BMJ Open 2014

Jayaram et al. [A new “virtual” patient pathway for the management of radial head and neck fractures](#). JSES 2013

Open Access

Research

## BMJ Open Effect of a redesigned fracture management pathway and ‘virtual’ fracture clinic on ED performance

J Vardy,<sup>1</sup> P J Jenkins,<sup>2</sup> K Clark,<sup>1</sup> M Chekroud,<sup>1</sup> K Begbie,<sup>1</sup> I Anthony,<sup>2</sup> L A Rymaszewski,<sup>2</sup> A J Ireland<sup>1</sup>

**To cite:** Vardy J, Jenkins PJ, Clark K, et al. Effect of a redesigned fracture management pathway and ‘virtual’ fracture clinic on ED performance. *BMJ Open* 2014;4:e005282. doi:10.1136/bmjopen-2014-005282

► Prepublication history for this paper is available online. To view these files please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2014-005282>).

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#### ABSTRACT

**Objectives:** Collaboration between the orthopaedic and emergency medicine (ED) services has resulted in standardised treatment pathways, leaflet supported discharge and a virtual fracture clinic review. Patients with minor, stable fractures are discharged with no further follow-up arranged. We aimed to examine the time taken to assess and treat these patients in the ED along with the rate of unplanned reattendance.

**Design:** A retrospective study was undertaken that covered 1 year before the change and 1 year after. Prospectively collected administrative data from the electronic patient record system were analysed and compared before and after the change.

**Setting:** An ED and orthopaedic unit, serving a population of 300 000, in a publicly funded health system.

**Participants:** 2840 patients treated with referral to a traditional fracture clinic and 3374 patients managed according to the newly redesigned protocol.

**Outcome measures:** Time for assessment and treatment of patients with orthopaedic injuries not requiring immediate operative management, and 7-day unplanned reattendance.

**Results:** Where plaster backslabs were replaced with removable splints, the consultation time was reduced. There was no change in treatment time for other injuries treated by the new discharge protocol. There was no increase in unplanned ED attendance, related to the injury, within 7 days ( $p=0.149$ ). There was a decrease in patients reattending the ED due to a missed fracture clinic appointment.

**Conclusions:** This process did not require any new time resources from the ED staff. This process brought significant benefits to the ED as treatment pathways were agreed. The pathway reduced unnecessary reattendance of patients at face-to-face fracture clinics for a review of stable, self-limiting injuries.

#### Strengths and limitations of this study

- This study used prospectively collected administrative data for a large number of consecutive patients.
- It provides useful information to demonstrate that there was no significant increase in workload in the emergency department.
- The use of removable splints in preference to plaster backslabs resulted in reduced treatment time.
- This study cannot confirm a causal relationship between these findings, only an association.
- This study design cannot detect any longer term orthopaedic consequences of this new process such as missed diagnosis or late complication detection. Further studies should be performed to examine this.

department (ED), the patient is often initially reassessed by the most junior member of the orthopaedic team. Both these issues can lead to increased time in the ED, along with unnecessary subsequent clinic visits. A collaboration between Orthopaedic and Emergency Medicine Services at our institution has resulted in a redesigned fracture management system with agreed guidelines on treatment, direct admission criteria and leaflet supported discharge from the ED, along with implementation of a ‘Virtual’ fracture clinic (VFC) system for orthopaedic review. Although other institutions have introduced systems of outpatient trauma triage and nurse-led clinics,<sup>1, 2</sup> there are no reports of units implementing protocols for the definitive management of many simple, stable fractures completely within the ED.

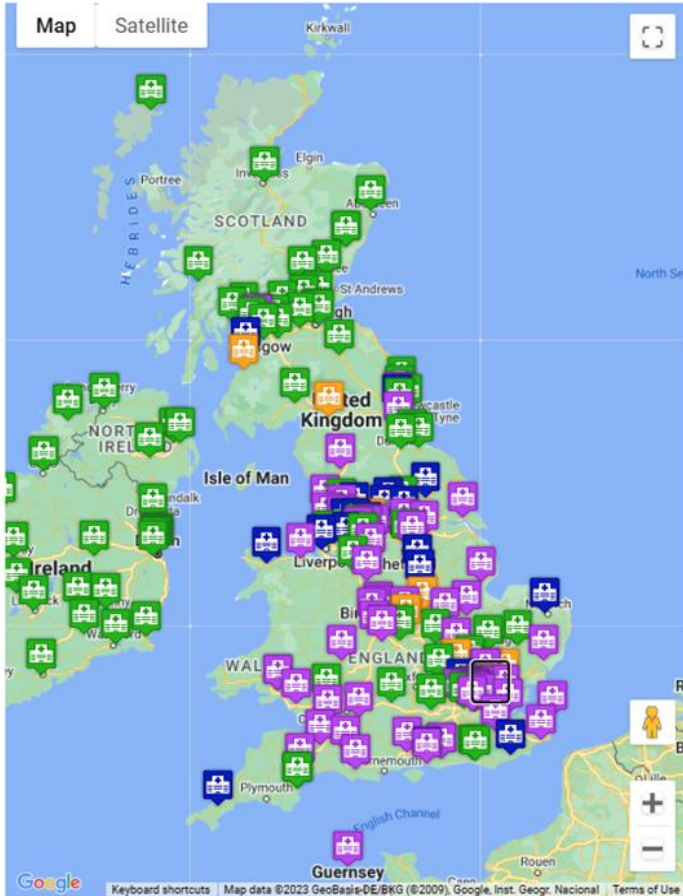
The redesigned process had clear benefits



# WIDELY IMPLEMENTED & LINKS


## Redesign Sites

The following map shows the units that have either fully implemented the principles of Fracture Clinic Redesign (Green), or have introduced the leaflets in the ED (amber). Other units have visited Glasgow Royal Infirmary and are planning a redesign (dark blue) while others have made initial enquiries (fuschia).



- [Fracture Clinics for the Future | Fracture Pathway Redesign \(fractureclinicredesign.org\)](https://fractureclinicredesign.org)
- [Leeds Fracture Clinic - Virtual Treatment Pathways \(leedsth.nhs.uk\)](https://leedsth.nhs.uk)
- [NOA-March-2020-Peter-Domos-eVFC.pdf \(nationalorthopaedicalliance.co.uk\)](https://nationalorthopaedicalliance.co.uk)
- [e005282.full.pdf \(bmj.com\)](https://bmj.com)

# POSTERS




## Virtual Treatment Pathways Upper Limb


#Elbow  
(Radial Head, Radial Neck & Occult)

### Clinician Must Do's

- Please provide patients with a VTP information leaflet
- Document on the leaflet the exact injury title (see above list)
- Advise the patient to access their injury via the website address or QR Code
- Inform the patient they will not receive any contact from the fracture clinic
- Patient can contact the clinic directly if they have any concerns
- Always refer patient to the Fracture Clinic for Governance

[www.bhrhospitals.nhs.uk](http://www.bhrhospitals.nhs.uk)  
@BHRUT\_NHS  
Barking, Havering and Redbridge University Hospitals NHS Trust

TAKING  IN YOUR CARE




## Virtual Treatment Pathways Lower Limb

#Fibula Avulsion	#Metatarsal (excluding Lis-Franc)
#Weber A	#Base of 5 <sup>th</sup> Metatarsal
#Talus Avulsion	#Cuboid Avulsion
#Navicular Avulsion	#Cancaneal Avulsion
#Big toe (closed)	#Toes (closed)

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[www.bhrhospitals.nhs.uk](http://www.bhrhospitals.nhs.uk)  
@BHRUT\_NHS  
Barking, Havering and Redbridge University Hospitals NHS Trust

TAKING  IN YOUR CARE



# PATIENT INFORMATION LEAFLET

**NHS**  
Barking, Havering and Redbridge  
University Hospitals  
NHS Trust



## Virtual Fracture Treatment Pathway

www.bhrhospitals.nhs.uk  
@BHRUT\_NHS  
Barking, Havering and Redbridge  
University Hospitals NHS Trust



### Virtual Treatment Pathways

You have been referred to the virtual fracture clinic website following attendance at the urgent treatment centre.

Your x-rays have been reviewed and you have a stable injury for which you do not need to be followed up in a face-to-face fracture clinic.

Your Injury is:  
.....

### How to access the Virtual Treatment Pathway Website

You have been provided with this leaflet containing a QR code for you to scan which will take you through to the website, or you can reach the website at:

<https://www.bhrhospitals.nhs.uk/the-virtual-treatment-pathways>

### QR Code – please scan



### Using the Website

Once you have logged into the website, please select the site of your injury – either arm or leg and select the type of injury identified on this leaflet.

Here you will find written information and videos for how to manage your injury.

You will not receive any further communication from the Virtual Fracture Clinic team.

However, if you are unable to access the QR code or website, or have any queries, please contact us:

Tel: 01708 435 000 ext 3923  
Email: [bhrut.virtualfracture.clinic@nhs.net](mailto:bhrut.virtualfracture.clinic@nhs.net)

If you would like this information in an alternative format, or if you need help with communicating with us, please let us know. You can call us on 01708 435 454 / 020 8970 8234 or email [bhrut.pals@nhs.net](mailto:bhrut.pals@nhs.net).

If you are deaf or unable to communicate with us using telephone or email, we have a text service which can be contacted on 07800 005 502.

Patient Information No:  
Created in:  
Revision date:





# VIRTUAL TREATMENT PATHWAYS

**Fracture Clinic (Adults)**

- About
- The Fracture Clinic
- The Virtual Treatment Pathways** ▾
- Your Injury ▾
- The Plaster Room
- Feedback
- Contact us
- How to find us
- Our new app - coming soon ▾

**Services** ▾

## The Virtual Treatment Pathways



Please use the links below to access the correct virtual treatment pathway.

**ARM INJURIES**

**LEG INJURIES**

If you have any questions or concerns regarding your injury, please get in touch email or telephone.



# Fracture Clinic (Adults)

## About

The Fracture Clinic

The Virtual Treatment Pathways ▼

Your Injury ▼

Leg ▼

Arm ▼

Braces & Splints ▼

The Plaster Room

Feedback

Contact us

How to find us

The Virtual Treatment Pathways ▼

Your Injury ▼

Leg ▼

# Metatarsal ▼

# Fibula Avulsion ▼

# Base of 5th ▼

# Calcaneal Process Avulsion ▼

# Calcaneal Avulsion ▼

# Weber A ▼

# Big toe ▼

# Navicular Avulsion ▼

# Talus Avulsion ▼

# Toes ▼

# Cuboid Avulsion ▼

Arm ▼

# ACJ ▼

# Elbow ▼

# Triquetral ▼

Braces & Splints ▼

Sling

Walker Boot

Wrist splint



