

ORIGINAL ARTICLE



A national virtual fracture clinic service: A more tactful approach

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OPEN ACCESS

Received: 29.01.2020

Accepted: 07.02.2020

Published: 15.02.2020

Editor: Dr. D. R. Galfat

Citation: O' Reilly M, Sheehan E (2020) A national virtual fracture clinic service: A more tactful approach. *International Journal of Orthopaedics Traumatology & Surgical Sciences* 6(1): 35-38. <https://doi.org/10.47618/IJOTSS/v6i1.8>

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Funding: None

Competing Interests: None

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Published By Society of
Orthopaedics, Surgical and Dental
Sciences

ISSN

Print: 2455-0809

Electronic: 2454-4167

Abstract

Introduction: The redesign and reconfiguration of the traditional “face to face” fracture clinic model towards virtual assessment and management of patients has been shown to be safe, cost-effective and associated with high patient satisfaction and patient reported outcome rates. The purpose of this study was to look at the potential financial implications of introducing a national virtual fracture clinic service in Ireland. **Methods:** A combination of established costings for a virtual fracture clinic pathway at our institution and current available public data was utilised to create a national projection. **Results:** The introduction of a national TAC service could lead to a reduction of 31.5% of patients attending traditional “face to face” fracture clinic appointments with a further 35% of this cohort being discharged directly representing an overall projected cost saving per annum in excess of €3.3 million. **Conclusion:** The introduction of a national TAC service would promote patient empowerment without comprising clinical care and could provide significant cost savings and financial benefits for the Irish Public Health System without the need for substantial investment.

Keywords: Trauma Assessment Clinic; virtual fracture clinic; health reform

1 Introduction

The virtual clinic model is increasingly being adopted by various medical and surgical specialities and has revealed both a safe and cost-effective patient pathway associated with high patient satisfaction rates and patient reported outcomes. [1–8] The redesign and reconfiguration of the traditional “face to face” fracture clinic model towards virtual assessment and management of patients has been shown in some studies to equate to a saving of almost 40% in direct costs. [8–11] While indirect costs are more difficult to accurately determine, some stud-

ies have cited approximately €80 per consultation as a cost to society, because of a reduction in productivity, as well as equating to nearly half a day of school lost with regard to paediatric fracture clinic appointments. [12–14]

A virtual fracture clinic service, known as the Trauma Assessment Clinic or TAC, was introduced at the Midlands Regional Hospital Tullamore (MRHT) in 2016 and was the first unit to introduce this novel care pathway in the Irish Public Health System. [15] In this model patients arriving to the Emergency Department (ED) with injuries that are TAC appropriate

(simple, stable fracture patterns) are treated as per a recognised protocol. Patients are provided with information about their injury and placed in a removable splint or cast and informed that they will receive a follow up phone call from the orthopaedic team. Within 24-72 hrs the patient's clinical notes and x-rays are reviewed by the TAC multidisciplinary team (MDT) and patients are contacted and counselled as to their planned treatment. [15] One study revealed that during the first 19 months of its introduction the TAC reviewed a total of 2,704 patients which represented a cost saving of over quarter of a million euro, when compared to the traditional "face to face" pathway, with 97% of surveyed patients stating they agreed or strongly agreed that they were satisfied with their recovery. [15]

The aim of this study was to look at the potential financial implications of introducing a national virtual fracture clinic service in Ireland.

2 Methods

A direct comparison of patient numbers reviewed in the traditional "face to face" fracture clinic, pre and post the introduction of the TAC, was carried out between two corresponding periods. These figures along with established costings of the TAC pathway at MRHT were inputted into current available public data to create a national projection.

3 Results

Pre and post TAC introduction comparison:

During the period of May 2017 to Feb. 2018 [Post TAC] there was a total of 1,832 patients reviewed via the traditional "face to face" fracture clinic at MRHT. During the corresponding period in 2014-2015 [Pre TAC] there was a total of 2,676 patients reviewed via the traditional "face to face" fracture clinic at MRHT. [15] This represents a reduction of 31.5% following the introduction of the TAC pathway (See Table 1).

Table 1. Comparison of patient numbers reviewed pre and post introduction of TAC

Time Period	Patient Numbers Reviewed
2014-2015	2676
2017-2018	1832
Reduction	31.5%

National Projections

A cost analysis was performed at MRHT and revealed that a traditional "face to face" fracture clinic appointment costs €129 versus €28 for a TAC appointment - a cost saving of €101 per consultation (See Table 2). [16]

Table 2. Cost comparison of traditional "face to face" clinic and TAC

Clinic Type	Cost per consultation / Patient
Traditional "face to face" fracture clinic	€129
Trauma Assessment Clinic (TAC)	€28
Cost Saving	€101

Currently in Ireland approximately 55,000 new patients attend fracture clinics annually. [17] Based on the MRHT TAC model figures, the introduction of a national TAC service could lead to a reduction of 17,325 [31.5%] patients attending traditional "face to face" fracture clinic appointments representing a potential cost saving of over €1.7 million at initial assessment (See Table 3).

Table 3. Initial assessment patient number and cost projections

Patient Numbers	Traditional "face to face" Clinic	Trauma Assessment Clinic [TAC]	Cost
Pre national TAC service	55000	-	€7,095,000
Post national TAC service	37,675	17,325	€5,345,175
Potential Cost Saving at initial assessment			€1,749,825

It is estimated that each new attendance at a traditional "face to face" fracture clinic appointment generates 2.6 return visits. [17] Current data from the MRHT TAC model reveal that 35% of patients reviewed in the TAC are discharged directly. [15] Therefore of the projected 17,325 patients that would be reviewed in a national TAC service 6,063 patients would be expected to be discharged directly representing a cost saving of over €1.5 million due to a reduction in unnecessary return appointments (See Figure 1).

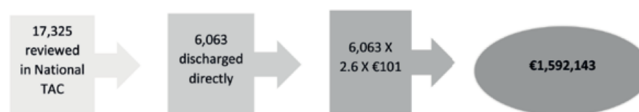


Fig 1. Cost saving from unnecessary return appointments

Therefore, the overall projected cost saving of introducing a national TAC service would be in excess of €3.3 million per annum (See Table 4).

Table 4. Total Projected cost saving post national TAC introduction per annum

Potential cost saving at initial TAC assessment	€1,749,825
Potential cost saving due to reduced return attendances	€1,592,143
Total Projected Cost Saving Post National TAC introduction per annum	€3,341,968

4 Discussion

A gross under funding of the Irish Public Health service over numerous preceding decades has led to the extreme challenges with regard to patient access, bed availability, staff shortages and waiting lists. [18, 19] From February 2016 to January 2017 there has been an increase of 26% in orthopaedic outpatient waiting lists with orthopaedics having the highest median patients waiting across all outpatient specialities. [20] Furthermore it is estimated that a third of these listed patients do not need a consultant evaluation and could be dealt with safely via alternative pathways. [20] Any measures that promote patient empowerment but without comprising patient care should be harnessed by health managers. [15]

This study reveals the potential cost savings and financial benefits of introducing a national TAC service. The projected direct cost saving of over €3.3 million does not take into account the far greater and outreaching economic and societal implications of reduced, unwarranted follow-up in the context of work days lost, school days lost and associated childcare costs. A national roll-out of the TAC service would require little investment as the necessary infrastructure of digital imaging is already in place and not being utilised to its maximum potential in terms of electronic referral capacity and clinical conferencing. [21, 22] Furthermore the necessary collaterals of allied health professionals and administrative staff would only require a reorganisation or redeployment of services in most units.

Additional benefits of the TAC model are the allowance of more time for more complex cases as a result of reduced unnecessary appointments. It also acts as a safety net for any potentially missed fractures but also providing an invaluable teaching platform for undergraduate and higher surgical trainees. [15]

A nationwide virtual fracture clinic pathway is certainly attainable and would provide huge benefits for patients as well as being a world first placing Ireland at the forefront of world leadership in terms of new health care reform.

5 Conclusion

The introduction of a national TAC service would promote patient empowerment without comprising clinical care and could provide significant cost savings and financial benefits

for the Irish Public Health System without the need for substantial investment.

Compliance with ethical standards

Conflict of interest: The authors declare that they have no conflict of interest.

Ethics Ethical approval was not required for the study as it was a service evaluation utilizing public available data.

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