SUSQI PROJECT REPORT

Hand Therapy Pre-operative Appointment for Plastic Hand Trauma Patients

Start date of Project: 20/09/23
Date of Report: 27/12/23

Team Members:
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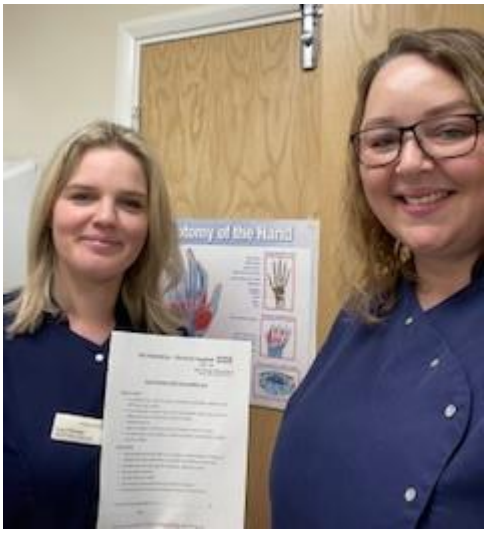

Background:

Hand Therapy is an outpatient department accepting acute referrals from trauma and orthopaedics (T&O) consultants, Virtual fracture clinic and Plastics consultants. We work closely with both these specialties and run joint MDT clinics.

All postoperative patients are required to be seen in hand therapy 3-5 post op as per British Association of Hand Therapy Guidelines. This can be challenging to find appointments at short notice and to make successful telephone contact with the patient to inform them of their appointment. If we are unable to contact a patient via telephone this results in a delay to care as extra time is required for sending out appointment letters which the trust sends 2nd class. It has been noticed anecdotally that these patients have increased complications and require higher hand therapy input as a result.

There is evidence to suggest early hand therapy and good patient education can reduce complications and improve patient compliance (Johnson et al. 2020).

Specific Aims:

To evaluate the sustainable value of implementing a pre-surgical consultation with the hand therapy team, compared to a previous patient pathway where patients were contacted and booked in for hand therapy post-surgery.

Methods:

Hand therapy often need to see patients on the 3rd day post op, it was previously hard to get quick enough appointments. Patients had little to no information regarding what to expect of Hand Therapy and the timescales required. Hand Therapy admin team were often challenged by patient that their appointment was too soon in Hand Therapy as they still had postoperative Plaster of Paris or bandage in situ.

The Hand Therapy Team Leads streamlined this process by creating a new pathway. This was discussed with plastics consultants and registrars for their approval. The process was disseminated to the wider Hand Therapy Team and communicated to the Therapies manager.

Table one: Summary of previous and new pathway steps

Both pathways

- Patients present to A&E
- A&E refer to plastic trauma clinic
- Patient attends next available trauma clinic
- trauma assessment +/- surgery booked

Previous pathway

- Consultants refer to hand therapy
- Referral printed from ICE
- Referral triaged daily by senior staff
- Senior staff allocate appointment based on clinical need and appointment availability
- Referral given to admin team to make contact with patient
- Appointment given over the phone
- If unable to make contact appointment letter sent to patient

New pathway

- Plastics registrar directs patient to hand therapy department with short summary of suspected injury and operation date
- Hand therapist sees patient when able (usually within 15 mins) to
  - discuss the hand therapy process with patient and answer questions.
  - provide handout including general post op information and Hand Therapy contact details.
  - Schedule hand therapy appointment for 3-5 days post op where possible
  - Complete Quick DASH outcome measure
  - complications also discussed
- Consultants refer to hand therapy
- Referral printed from ICE
- Referral received no further action required

Data was collected pre and post change. We reviewed care for 10 patients on the previous pathway and 10 patients details of data collected and outcomes in the below measurement and result sections.

Measurement:

Patient outcomes:

We collected the following information to inform patient outcomes:

- total number of both hand therapy and consultant appointments required
- number of DNAs and breach to targets in the HT service
- additional appointments and treatment required by patients (e.g. nurses clinics, plastics reviews, additional splints).
- total dressing spend (as an indication of treatment required by patients).

Environmental sustainability:

We used the emission factor of 22kgCO2e per outpatient appointment from PSSRU (2019). This includes travel and all equipment used/given during the appointment.

To estimate the CO2e saving from reduced dressings, we used the emission factor for medical equipment: 0.46 $kgCO_2e$ / £ from greener NHS 2020/21 database

Our CO2e reduction was translated into miles driven using emission factor 0.3386 kgCO2e/ mile driven in an average car with unknown fuel, from the UK Government Greenhouse gas reporting: conversion factors 2023.

Economic sustainability:

The following costs were obtained:

- A consultant led appointment (£184) was taken from the national schedule 2021-22. This may be an over-estimation of costs for our Trust, however data was not available internally.
- An OT/physio appointment (Assuming 30 minutes with 50/50 band 6 and 7 time) - average of 27.50 / hour or £13.75 per appointment. (Average cost from B6 range of £22.56-27.30/hour and B7 £28.03-32.17/hour)
- A DNA: This was assumed to be the same as an appointment.
- Dressings: Available within the hand therapy department

Social sustainability:

Patients:

Our service collects friends and family feedback (how is this provided to families and what kinds of questions are included?). This was compared before and after the pathway change.

Staff:

We gained informal feedback from staff on the impact of the project on their work.

Results:

The outcomes of our pathway change across 10 patients' episodes of care (from initial consultant review until discharge from both services) are summarised below.

- Total Hand therapy appointments (30 minutes) save 45, 43.6%

- Other Outpatient appointments including dressing, consultants (15 minutes) save 33, 54.5%
- Average HT DNA pre process change 21% (3/14)
- Average HT DNA post process change 10% (1/10)
- Breech to target date pre process change 43%
- Breech to target date post process change 10%
- Average time under hand therapy care: 78.3 days reduced to 61.7 days which is a 21.2% reduction
- total dressing spend on patient group pre process change £61.43
- total dressing spend on patient group post process change £34.98
- 43% decrease in stock cost
- Other additional costs incurred pre process change (and not post) 1x nurses clinic appointment, 1x plastic reg review, 2x additional splints costing £4.27

Patient outcomes:

There was a surprisingly positive outcome for patients and staff. Patient appointments reduced as well as duration under hand therapy (by 21.2%) and consultant care. There was a reduction in delayed care and patient satisfaction was maintained/ slightly elevated generally throughout the service. We received good feedback verbally from the consultants and improved communication and confidence between departments. Patient expressed verbally that they felt a sense of confidence that they knew the plan going forward, and physically where to come to for their appointment which helped to reduce stress and anxiety.

There is potential for this pathway to also reduce the amount of pain medications required by patients, however it was outside of the scope of this project to quantify or measure this.

Environmental sustainability:

A reduction in 33 appointments required with the consultant team is a reduction in 726 kgCO2e.
A reduction in 45 appointments required with the hand therapy team is a reduction in 990 kgCO2e.

Total saving of 1,716 kgCO2e for 10 patient episodes of care. This is an average saving of 171.6 kgCO2e per patient.

With an average of 11 post op plastics patients referred into the service per month, we therefore anticipate annual savings of **22,651.2 kgCO2e**, equivalent to driving 66,896 miles in an average car.

Economic sustainability:

A reduction in 33 consultant appointments saves £6,072 from 10 patient episodes of care. Projected across the year to full caseload, this is £80,150. A reduction in 45 hand therapy appointments equates to £618.75 from 10 patient episodes of care. Projected across the year to full caseload, this is a saving of £8,168.

DNA cost savings: We have conservatively estimated we can prevent 1 DNA per month, a saving of £165 a year.

A 43% decrease in stock cost for the HT team was seen equating to £26.45 (£2.65 per patient). projected across a year this equates to £349.

In total the projected annual savings from the project are **£88,829.**

Social sustainability:

Patients:

- Friends and family pre process change 92% very good, 8% good
- Friends and family post process change 97.5% very good, 2.5 % good

While the feedback for our service was already very positive, we have seen a 5.5% increase in patients reporting their experience was very good.

We asked 10 patients if having an environmentally friendly service was important to them. 50% very important, 20% important and 30% neutral.

Comments from patients included;"

"Everyone should be aware of environmental impact. Any effort to be sustainable is a good effort"

"We all have to do our best to minimise carbon footprint, hope the therapy unit can do this too"

"So important for future generations"

"Yes please as long as care isn't impacted"

"This is very important to me and I make decisions based on environmental considerations"

"It's great to see departments making an effort to be greener"

Staff:

Within 10 episodes of care, 31.5 hours of appointment time was saved for hand therapy, and 8.25 hours of 'other' appointment time (with consultants, for dressing changes, etc).

Projected across a year, this equates to 330 hours of hand therapy time saved and 110 hours from other appointments saved for 132 patients.

Staff quotes:

"I have found it to be very helpful – it gives admin time to prepare notes etc and book appointments within the timescale required (Admin)"

"I really like that it provides a better service for the patient. It can be stressful to do when we are busy but the outcome is worth it (Hand Therapist)"

"I found it really improves patient pathway and improves admin systems and it reduces patient anxiety (Hand Therapy)"

"I think it is so much quicker and it has saved me a lot of work and I appreciate the change in the system (Admin)"

"Thank you, this is excellent work. My appraiser was very impressed with the results of the audit, he has recommended that you register this audit with the trust quality and effectiveness group (Consultant)"

"I am very impressed with the Co2/sustainability data and I hope the judges in the Green Team competition will also be (Consultant)"

"Well done - glad to hear the initiative was so effective (Registrar)"

Discussion:

This process change requires minimal input nor disruption to current Hand Therapy service for significant benefits to patient, admin staff, hand therapists, plastics consultants and nursing staff.

limitations: small sample size therefore data may be limited and not representational when scaling up. No clinical outcome measure data available prior to this change therefore no comparative data to evidence change of clinical outcome.

Barriers / challenges encountered

- Can be inconvenient to find time to see patients when service is busy.
- When registrars rotate into department training needs to be in place to ensure processes continue. When the registrars did rotate during the project we noticed a significant reduction in patients being referred for the pre-op process. We discussed this with the consultant and did a short training for the registrars, which enabled the process to restart. Going forward we will be proactive in ensuring that this training takes place for new members of staff.
- Staff training need - one off 30 min training for new staff on procedures and what information to give patient.,

We found that good communication between staff members and teams was key to the success of the project. Positive feedback from staff and patients was a motivating factor to continue and succeed with this project. Overall attitudes to the project have been positive because the multiple benefits have been apparent.

This is a very low risk project, if the systems fails it is backed up by the previous system (which is still in place for the T&O team)

In the monthly therapies governance meeting, plastic audit meeting and monthly hand therapy staff meetings the live data is communicated. This allows us to be responsive to change and notice if processes are not being followed and action appropriately. Having access to this data allows us to plan staffing appropriately, and highlight any concerns or risks with higher management.

As a department we would like to roll this process out to elective plastics patients and then to the trauma and orthopaedic service both trauma and elective. This project would be relevant for any trauma based hand therapy out-patient department. There is also the possibility that this process could also be rolled out in trauma based physiotherapy out-patient departments.

It has been recommended and we are considering writing this up for the British Association of Hand Therapy Journal, to benefit other services.

Conclusions:

Overall, this project's return significantly outweighs the input from both patients and staff. We were surprised by the positive environmental impact this project produced, as our initial thoughts were that it was more of a service improvement project to benefit patient experience, however there was a significant positive impact on reduction of carbon emissions alongside the expected benefits we were hoping to achieve.

References and Resources

- NHS England » 2021/22 National Cost Collection Data Publication
- Greenhouse gas reporting: conversion factors 2023 - GOV.UK (www.gov.uk)
- open_central_slip_therapy_standards_30032021_final_1.pdf (hand-therapy.co.uk)
- 3 Flexor tendon final.pdf (bssh.ac.uk)
- Johnson, S., Kelley, Brian P., Waljee., Jennifer F and Chung, K. C. (2020) "Effect of time to hand therapy following zone II flexor tendon repair," *Plastic and reconstructive surgery. Global open*, 8(12), p. e3278. doi: 10.1097/gox.0000000000003278.

Critical success factors Please select one or two of the below factors that you believe were most essential to ensure the success of your project changes.			
People	**Process**	**Resources**	**Context**
☐ Patient involvement and/or appropriate information for patients - to raise awareness and understanding of intervention ☐ Staff engagement X MDT / Cross-department communication ☐ Skills and capability of staff ☐ Team/service agreement that there is a problem and changes are suitable to trial (Knowledge and understanding of the issue) ☐ Support from senior organisational or system leaders	☐ clear guidance / evidence / policy to support the intervention. ☐ Incentivisation of the strategy – e.g., QOF in general practice X systematic and coordinated approach ☐ clear, measurable targets ☐ long-term strategy for sustaining and embedding change developed in planning phase ☐ integrating the intervention into the natural workflow, team functions, technology systems, and incentive structures of the team/service/organisation	☐ Dedicated time ☐ QI training / information resources and organisation process / support ☐ Infrastructure capable of providing teams with information, data and equipment needed X Research / evidence of change successfully implemented elsewhere ☐ Financial investment	☐ aims aligned with wider service, organisational or system goals. X Links to patient benefits / clinical outcomes X Links to staff benefits ☐ 'Permission' given through the organisational context, capacity and positive change culture.