



## **SUSQI PROJECT REPORT**

### **Reinventing hip precautions at HHFT**

**Start date of Project:** May 2025

**Date of Report:** September 2025

**Team Members:**

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**Background:**

Total Hip Replacement (THR) is one of the most common orthopaedic procedures in the UK with over 80,000 being completed between 2018-2019. Hip precautions were created to theoretically mitigate dislocation risk of the new prosthetic joint.

These precautions advise patients to not move into these ranges for the first 6 weeks post-op:

- 1) hip flexion >90 degrees
- 2) hip internal rotation
- 3) hip adduction across midline

To maintain movements within these parameters the therapy team is required to issue temporary adaptive equipment to a large proportion of patients.

With technological advancements over the past 70 years, patient outcomes continue to improve, with dislocation incidence averaging between 1 and 3%. Recent literature (Machin, 2022) has proven that following hip precautions does not reduce the risk of dislocation. In addition to this, hip precautions may unnecessarily exacerbate anxieties and fear about hip dislocation and impact a patients physical and psychological rehabilitation (Lightfoot, 2021).

In September 2025, we will open the Hampshire Orthopaedic Centre (HOC), a unit that will centralise orthopaedic experience with the goal to discharge patients on the same day following their hip and knee replacements. To facilitate this, in alignment with evidence, it was agreed by the operating consultants and the therapy team that traditional hip precautions would not be followed. We will instead coach patients to avoid extremes of movement, encourage them to listen to their bodies and empower them to guide their own movement during recovery.

The opening of the HOC has provided a valuable opportunity to reflect on our practices. THR will continue to happen at HHFT, however currently following the outdated guidelines to follow hip

precautions post operatively. It is essential that we are providing equitable care for our patients at the HOC and at HHFT, therefore, we propose to stop recommending hip precautions to the patients coming through HHFT. It is essential that we can come to a unanimous agreement on this decision that can have a significant impact on patient outcomes and environmental, financial and social sustainability. We aim to collect data about the sustainability of this practice to share with our team to fully inform this decision.

We propose to deliver a service of a better quality for a lower cost through eliminating equipment cost and by improving productivity of staff by implementing a more efficient pre-assessment system.

#### Specific Aims:

To stop the recommendation of traditional hip precautions and introduction of a more efficient pre-assessment system for total hip replacements at HHFT.

#### Methods:

##### Studying the system

To ensure a safe and speedy discharge home, we complete a social assessment for all total hip and total knee patients pre-operatively. This is known as our 'pre-assessment'.

TKR patients (who have no specific precautionary advice) receive a text message that triages them into a 'high-risk' or 'low-risk' group. The low-risk patient group receives educational material to help them prepare for their surgeries and no further pre-assessment. The high-risk patient group (e.g. carer for someone, lives alone, low level of pre-operative mobility/health) are highlighted to our team, who will then call the patient to complete a more in-depth pre-assessment.

Since successful introduction of these triage questionnaires our efficiency of pre-assessments has more than doubled. At RHCH, before this change at we were completing approx. 100 social assessments/ month. We are now completing over 200, with no new associated adverse incidents reported.

Whilst continuing with hip precautions for the THR patients at HHFT we are unable to introduce the same triage system. We must call all HHFT THR patients to assess the height of their furniture (bed/chair/toilets) to discern whether they will require temporary adaptive equipment to raise these surfaces to ensure they do not break hip precautions. Therefore, for these patients, our therapy practitioners must continue to complete timely telephone pre-assessments for every patient listed. We distributed surveys to the team who self-reported time spent on these assessments as approx. 40 mins/patient.

We conducted a review of the literature on hip precautions and found that in hospitals where precautions were stopped, the dislocation rate remained unchanged. GIRFT's (Get It Right First Time) research team reviewed the records of almost 230,000 patients who had primary THR in England between 2011 and 2019. Of these patients, 1,800 (c.0.8%) had dislocations within six months of surgery. In hospitals where the traditional precautions were stopped, the dislocation rate was 0.8% both before and after the decision to stop.

We contacted a neighbouring trust (UHS) to understand the experience of stopping hip precautions, a decision that was made at board level. The UHS therapists reported having difficulty coming to a consensus about what hip precautions were with the rest of the MDT. This confusion brought about uncertainty and inconsistency in practice, increasing the therapist's workload.

This reported experience highlights the importance of this decision being made unanimously amongst the treating therapists and the operating consultants to reduce confusion among staff and deliver a consistent and safe level of care to patients.

#### Improvement

To improve our service, we propose to stop recommending traditional hip precautions to our HHFT THR patients. This will allow us to introduce the more efficient text message triage system for these patients- a system that has been in place now for our TKR patients since March 2025 without any reported associated adverse incidents or delays to discharge.

We reviewed our recent equipment provision to calculate the financial impact of hip precautions and worked with the Centre for Sustainable Healthcare (CSH) to understand the environmental impacts of this practice. We issued patient surveys to better understand physical and psychological impacts of hip precautions on recovery.

#### Currently

We have previously contacted the operating consultants, however due to the complexity and nuance of the changes we are suggesting and we have been unable to reach a unanimous agreement. Therefore the decision was made to gather more information to fully inform this decision.

#### Next steps

We will use this report to support our proposal - unanimous agreement amongst consultants and therapists will be vital to update our recommendations. To circulate this information we will use, email, phone calls, ad-hoc face to face meetings and presentation at the divisional performance review meeting. The change will also require Board level approval.

Once an agreement has been made, our team will organise education sessions for: therapy team, ward nurses, pre- assessment nurses and the medical team. We will review and update trust guidelines, standard operating procedures (SOPs) and educational material given to patients. We will continue to collect data on adverse incidents, to assess the safety and effectiveness of this change, and share this information with neighbouring trusts to influence change at a local level. Ongoing data collection from these local changes, will drive changes at a national level.

#### Measurement:

##### *Patient outcomes:*

We expect to see an improvement in patient outcomes, with patients feeling more confident moving post operatively. To measure this change we have distributed patient surveys with outcomes detailed in the results section.

We also undertook a literature review to explore impacts on patient's outcomes.

#### *Population outcomes:*

While it has not been possible to quantify in the scope of this project, we anticipate the change can bring benefits to wider patient populations, as detailed in the results section.

#### *Financial impact:*

Costs of equipment were obtained from the Hampshire Equipment Services online catalogue. The type and number of equipment ordered over a 2-month period was retrospectively collected from spreadsheets updated by therapists for audit purposes.

We issue on average £1083/month (£12,996/year) of equipment to ensure patients can maintain hip precautions (E.g. Toilet seat raisers and frames, Armchairs, Chair raisers and cushions).

Therapist time used on equipment provision for maintenance of hip precautions was estimated by team members themselves within surveys. The cost of therapist utilisation was calculated using the Agenda For Change (AFC) Pay Scales rates from 2024/25 through the AFC website. Most of these telephone assessments are being completed by Band 4 Therapy Practitioners. Using the 'PSSRU- Unit Costs of Health and Social Care 2021' which states the cost of a Band 4 therapist is £35/hour.

There are no investment costs associated with updating of hip precautions recommendations.

#### *Environmental sustainability:*

A carbon footprint is the sum of greenhouse gas (GHG) emissions attributable to a given process. For the purpose of this project the quantity of these emissions are expressed in "carbon dioxide equivalents" (CO<sub>2</sub>e). The impact of this project on the NHS carbon footprint has been estimated by converting data on equipment provision into kilograms of CO<sub>2</sub>e.

#### *Equipment loan and usage:*

We issue on average £1083/month of equipment to ensure patient can maintain hip precautions (E.g. Toilet seat raisers and frames, Armchairs, Chair raisers and cushions). As equipment is reused with multiple patients, savings were estimated using a top-down cost method and the emission factor for rental/leasing medical equipment of 0.150 kgCO<sub>2</sub>e/£ spent.

$£1083 \times 0.150 = 162.45 \text{ kgCO}_2\text{e /month}$

$162.45 \times 12 \text{ (months)} = \underline{1,949.4 \text{ kgCO}_2\text{e}}$  per year on provision of equipment.

#### *Cleaning and decontamination*

Temporary adaptive equipment carries a delivery and a cleaning/decontamination cost. We attempted contact with Hampshire Equipment Services to establish the exact costs associated with delivery and cleaning, however they were unable to respond. Perhaps this demonstrates oversubscription and understaffing of these services, which provides evidence of the urgent necessity of the review of our recommendations.

At HHFT we provide on average 97.5kg/month of equipment associated with maintenance of hip precautions. This equipment needs to be cleaned and decontaminated in- between patient use. Using 'The carbon footprint of waste streams in a UK hospital' by Rizan et al which states that autoclave

decontamination carries a GHG emission factor of 569kg CO<sub>2</sub>e/kg we calculated the environmental cost of the cleaning of equipment as follows:

97.5kg /month x 12month = 1.17 tonnes of equipment/ year

569 kg CO<sub>2</sub>e x 1.17 tonnes = 665.73 kgCO<sub>2</sub>e per year on decontamination of equipment.

The use of the autoclave decontamination emission factor (569 kg CO<sub>2</sub>e/kg) may overestimate savings, as not all items require high-temperature sterilisation. Due to limited data on cleaning methods, this factor was applied as an assumption.

#### Delivery:

This equipment carries a delivery cost. On average 32 THR being performed across HHFT monthly in a van. We used an emission factor of 0.51001 kgCO<sub>2</sub>e per mile for an average diesel van from the UK Government [Greenhouse gas reporting: conversion factors 2025](#).

The distance of average delivery (round trip) was calculated using the locations of Hampshire equipment delivery site (Basingstoke, RG22 4DQ) and the furthest location of delivery (Fareham, Southampton).

Maximum delivery distance = Basingstoke to Fareham = 70 miles.

Minimum delivery distance = within Basingstoke = 1 mile.

Mean delivery distance = (70 +1) / 2 = 35.5 miles.

Hampshire Equipment Services (HES) administration team were unable to provide exact numbers as they vary but reported on average it would be between 4 and 8 drops per route dependant on distance between patient homes and demand of that particular day. We took an average of 6 deliveries per route to obtain carbon emission factors as below.

32 patient cases requiring equipment ÷ 6 (average drops per delivery) = 5.33 deliveries

35.5 miles x 5.33 deliveries = 189.2 miles/ month

189.2 miles x 12 months= 2,270 miles/ year

0.51001 kg CO<sub>2</sub>e x 2,270 = 1,157.7 kgCO<sub>2</sub>e per year on equipment deliveries

#### *Social sustainability:*

Surveys were distributed to team members and patients in elective orthopaedics. Data collected were a mix of qualitative and quantitative data. Answers from multiple choice questions were processed to show opinions of the team and open-ended statements were processed to identify themes.

#### Results:

##### *Patient outcomes:*

A patient survey demonstrated that stopping recommendations of hip precautions can help to deliver care that aligns with patient's wishes and optimises their recovery.

- 100% of patients agreed that hospital guidance should be based on up-to-date evidence (currently we are not)
- 75% of patients strongly agreed that hospital guidance should be sustainable (we cannot currently say we are optimising sustainability)
- 75% of patients agreed or strongly agreed that they have felt worried about moving

post THR  
(evidence suggests this can negatively impact recovery)

- 67% of patients agreed that the amount of equipment they had was necessary  
(demonstrating a lack of understanding- and need for patient education)

Open ended statements were processed to reveal two main themes: unnecessary equipment and movement related anxieties. Some examples of these comments:

*"I worried about twisting, making some things difficult- I live on my own"*  
*"I didn't use the raised toilet seats, I didn't need them"*

We will continue to measure the outcomes of our change by redistributing surveys when we have shared our proposal, and a decision has been agreed upon.

In addition to our patient feedback, we conducted a literature review and collated research which has identified factors that increase a patient's risk of dislocation following THR, the most significant independent risk factors for dislocation is prior hip surgery and component mispositioning. For these patients who require complex or secondary THR we suggest that individualized post operative notes include specific instructions to therapists to follow hip precautions.

If this procedure is followed, we don't expect to see a change in dislocation rates. Data about adverse incidents (and therefore rates of dislocation) will be collected and recorded. The Trust's Inphase reporting system enables us to monitor outcomes and to ensure there are no unintended consequences of these changes.

#### *Population outcomes:*

Although we are unable to measure these outcomes, we believe that redirecting therapists time to patient facing contacts on the ward will result in a more efficient service and thus a reduction in waiting time for orthopaedic surgery for the wider population.

Minimising unnecessary delivery of equipment may reduce the production of such equipment, reducing unnecessary greenhouse gases and improving health at a population level.

Reflecting on current literature and responding by updating our practice is what is expected of us as health care professionals. By doing so we will be positively contributing towards changing the public's perception of the necessity of hip precautions following THR, thus improving consistency of care nationwide.

#### *Environmental sustainability:*

We calculated the environmental sustainability of hip precautions by estimating the equipment costs, equipment cleaning/decontamination costs and delivery costs. To estimate the total costs, we have added those costs together as below.

Equipment costs + cleaning costs+ delivery costs

Total predicted yearly costs (= 1949.4kgCO<sub>2</sub>e + 665.73kgCO<sub>2</sub>e + 1,157.7 kgCO<sub>2</sub>e) = 3,772.8 kgCO<sub>2</sub>e.



We cannot however presume a total reduction in these savings as according to evidence complex or secondary THR patients are at a greater risk of dislocation, therefore may still need to follow hip precautions. Of the 32 THR performed at HHFT/month, 12.5% were complex or secondary THR. We may still need to issue equipment to such patients; therefore, we suggest an 87.5% cost reduction.

87.5% of 3,772.8 kgCO<sub>2</sub>e is a projected saving of **3,301.2 kg CO<sub>2</sub>e** per year, equivalent to driving 9,712.3 miles in an average car.

#### *Economic sustainability:*

Our predicted financial savings will reduce costs by means of cost reduction, cost avoidance and service productivity improvements.

#### Staff time savings

Time spent for equipment provision = 40 mins/patient.

We perform on average 32 THR per month at HHFT.

Time spent 40 mins x 32 patients = 1280 mins or 106.6 hours/month

106.6 hours x £35/hour = £3731/month

£3731/month x 12(months) = £44,772 staff expenditure on identification and allocation of equipment associated with hip precautions per year. We will not eliminate this cost as we will still need to do 'full' telephone assessments for those with more complex social backgrounds or for those patients who will still require hip precautions (e.g. secondary or more complex replacements).

We can estimate from the efficiency savings calculated when updating our pre-assessment process for TKR that we will be able to complete twice as many pre-assessments in as much time.

Therefore, suggesting a saving of 50% of £44,772 = **£22,386**

#### Equipment cost savings

The equipment we issue is re-useable, the cost stated is cost per patient per loan.

Monthly equipment costs = £1,083

Yearly equipment costs = £12,996

Reducing equipment costs by 87.5% (£12,996/100 x 87.5) = **£11,371**.

£11,371 + £22,386 = **£33,757** financial savings predicted over 1 year

Recent news reports NRS Healthcare (national health care equipment service) who provides equipment to a large portion of our patients has had to close due to financial difficulties (BBC, August 2025). Minimising equipment provision and promoting more independence in function post arthroplasty will improve economic sustainability for third party companies such as NRS. This will allow resources to be redirected to other services improving efficiency of discharge from acute wards from HHFT and elsewhere in the southeast.

### *Social sustainability*

For patients,

- 100% of patients agreed that hospital guidance should be based on up-to-date evidence
- 75% of patients strongly agreed that hospital guidance should be sustainable
- 75% of patients agreed or strongly agreed that they have felt worried about moving
- 67% of patients agreed that the amount of equipment they had was necessary

Reducing anxieties and improving movement would increase muscle strength at the hip, therefore reducing risk of dislocation. It may also expediate the patients return to normal function, hobbies and activities, reduce time spent out of work, accelerate return to driving therefore promoting independence.

For staff,

- 100% of staff agree or strongly agree that sustainability is important
- 88% of staff agree or strongly agree that time spent on equipment/hip precautions could be better utilised
- 30% of staff feel that patients would dislocate their hip if they didn't have equipment
- 50% of staff feel that equipment is essential for rehabilitation

The one theme revealed was the necessity to update education delivered to staff regarding hip precautions.

We have estimated that 34 weeks of work per year is required to assess and provide unnecessary equipment, work that is considered of less value. By improving our pre-assessment process and reducing this time spent, it alleviates staff to spend time face to face with patients, providing valuable education using their expertise, in turn likely improving job satisfaction.

### **Discussion:**

The main objective of this project was to stop the recommendation of traditional hip precautions. The collection of this data has provided us with information to deliver to the consultants and wider MDT to fully inform a decision to move away from hip precautions.

As we have not yet made this change, our calculations are based on averages and estimations, therefore introducing area for error.

Our sample size was small (only 2 months of data collected) so this may not be representative of number primary THR's, Revision THR's etc. thus making it difficult to create an accurate estimation of equipment as the number of hip replacements completed within a month will vary dependent on which consultants are operating, also whether these patients fall into the higher dislocation risk category is entirely random in respect of theatre listing/scheduling and therefore impossible to predict accurately.

Dislocation following arthroplasty would be deemed as traumatic and therefore would be seen and intervened on at BNHH or a neighbouring trust A+E department (which could be an external trust)



This makes auditing dislocation rates difficult – we were unable to obtain a figure for dislocations pre proposed changes and would need to create a structured way to obtain this information accurately post change. The number of dislocations alone won't give us a detailed enough insight - the mechanism of dislocation would be equally important as this would tell us if the patient dislocated in a 'previously precautionary position' or not.

The number of pre-assessments completed before and after the recent change for Total Knee Replacements (TKR) is not indicative of the ongoing volume we expect to manage. This is because, during that period, we were actively working through a significant backlog of patients who had not yet been assessed. Our goal was to transition towards a more efficient pathway by ensuring pre-assessments are completed at least six weeks prior to surgery. As a result, the higher volume seen during this time was a temporary spike related to clearing the backlog, rather than a reflection of the steady-state workload we anticipate moving forward.

Another clear barrier we faced was the historic attitude toward hip precautions throughout the trust. There has never been a national directorate to change these views on precautions despite updated research being available and some NHS trusts eradicating standard hip precautions following primary arthroplasty in 2017. So, with research changing and updating constantly – this needs to be analysed and then disseminated down through various teams and eventually to patients.

Another barrier was getting all the consultants to agree on whether hip precautions should remain in place as standard – naturally they were difficult to get hold of and some didn't respond at all.

The risk associated with removing the prescription of hip precautions as standard is that patients are in theory at a higher risk of prosthesis dislocation. Though, a recent meta-analysis (2024) involving 3 RCT's with ~1,215 participants found that there is no statistically significant difference in dislocation rates between patients with and without hip precautions. It also concluded that patients without precautions demonstrated better functional outcomes (e.g., HOOS JR scores) and faster discontinuation of mobility aids. Also, should a patient dislocate following arthroplasty they would attend an A+E department to have it relocated – either closed (out of theatre) or open (in theatre) and this pathway wouldn't differ to a pathway for THR dislocation pre-change.

This project looked at hip precautions for elective total hip arthroplasty, with the vision being that patients are prescribed precautions with more individualised rationale behind them – considering their past medical history, level of function, muscle strength etc.

This approach could also be extended to patients who have undergone a THR due to trauma (Fractured neck of femur) where again, currently we are prescribing hip precautions as standard and therefore providing equipment for every single patient based on furniture heights, irrespective of physical assessment post operatively.

### Conclusions:

The usefulness of the project is yet to be seen – rather than seeing an immediate direct impact on patient outcomes the goals of this initiative would be to:

- Get a consensus amongst consultants re: Hip precautions following arthroplasty

- To standardise post arthroplasty care across our trust (HHFT) with the vision this could contribute to a rationale for a national change
- To ensure that equipment is handed out on a need's basis through physical assessment of function
- To redirect staff time from telephone pre-assessment towards patient facing contact/exercising/rehabilitation

The rationale for change and data collated will be presented to hospital at board level. Alongside this data we will need to collate data going forward regarding readmission rates for dislocations.

Changes very clearly show the potential positive financial benefit to the organization through cost saving, less procurement, and a reduction in blind equipment provision. This in turn improves the environmental sustainability of the service – reducing unnecessary delivery, unnecessary waste and having more equipment available to patients whom require it based on assessment. As from our findings, we worked out that if we stack all the toilet frames given out in a year by our department alone on top of one another, they would stretch higher than the Eiffel Tower.

This initiative has already been implemented throughout other trusts (national and local), proving that there are no adverse effects to patient care is essential in proving the initiative to have a lasting effect – this would be done by auditing the THR caseload for a significant amount of time and presenting this data to orthopaedic directives.

## References

- Dargel, J., Oppermann, J., Brüggemann, G.P., Eysel, P. Dislocation following total hip replacement. *Dtsch Arztebl Int.* 2014 Dec 22;111(51-52):884-90.
- Guo. J., He. Q., Sun. Y., Liu. X., Li., Y. No need for hip precautions after total hip arthroplasty with posterior approach: A systematic review and meta-analysis. DOI: 10.22024/UniKent/01.02.92342 *Medicine (Baltimore)*. 2024 Dec 13;103(50):e40348. doi: 10.1097/MD.00000000000040348
- Jones, K. & Burns, A. (2021) Unit Costs of Health and Social Care 2021, Personal Social Services Research Unit, University of Kent, Canterbury.
- Lightfoot., C.J, Coole, C., Sehat, K.R & Drummond, A. Hip precautions after total hip replacement and their discontinuation from practice: patient perceptions and experiences. *Disability and Rehabilitation Volume 43, 2021 - Issue 20*.
- Machin, J.T, Gray ,W.K., Roberts,A., Kenworthy, L., Manktelow, A., Briggs, T. An Analysis Of A National Administrative Dataset Demonstrating No Evidence Of Increase In Elective Primary Total Hip Arthroplasty Dislocation Rates When Postoperative Hip Precautions Are Not Used. *Journal Of Arthroplasty*. Dec, 2022.
- Rizan C, Bhutta M, Reed M, Lillywhite R. The carbon footprint of waste streams in a UK hospital. *Journal of Cleaner Production* 286 (2021) 125446. Measuring environmental impact from SusQI <https://www.sciencedirect.com/science/article/abs/pii/S0959652620354925>.
- Van der Weegen, W., Kornuikt, A., Das, D. Do lifestyle restrictions and precautions prevent dislocation after total hip arthroplasty? A systematic review and meta-analysis of the literature. *Clinical Rehabilitation*. 2015. Volume 30, Issue 4.

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