SUSQI PROJECT REPORT

Project Title: Implementing a one-off assessment with digital follow up for Rotator cuff related shoulder pain (RCRSP) in musculoskeletal (MSK) Physiotherapy.

Start date of Project: 03/03/2026

Date of Report: 15/05/2026

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Background:

Shoulder pain is the third most common musculoskeletal disorder worldwide after lower back and knee pain (Lucas et al., 2022). MSK Physiotherapy service evaluation data at South Warwickshire NHS Foundation Trust (SWFT) demonstrate that shoulder presentations account for approximately one in five MSK physiotherapy referrals. Between January 2023 and October 2025, 4,062 referrals were recorded for shoulder pathology of which around 60% (n = 2,450) were classified as rotator cuff related shoulder pain (RCRSP). This means that three in every five shoulder referrals present with RCRSP, making it by far the most prevalent shoulder condition managed within the service. RCRSP is an umbrella term encompassing a spectrum of conditions including subacromial impingement, rotator cuff tendinopathy, and partial rotator cuff tears, in the absence of full thickness rupture or significant glenohumeral joint pathology (Lewis, 2016). It is characterised by pain and functional limitation and is a leading cause of work absence and reduced quality of life in the working age population (Littlewood et al., 2015).

Analysis of local service data indicates that the mean treatment duration for RCRSP from initial appointment to discharge is approximately 90 days per patient, with considerable individual variability (SD 66–70 days). Treatment patterns by clinician banding reveal that band 5 and 6 Physiotherapists deliver an average of six face to face contacts per RCRSP episode, while band 7

clinicians achieve discharge in approximately three sessions. Across the service, the average is five contacts per patient.

This translates to approximately 2 hours 45 minutes of clinician time per episode (one 45-minute initial appointment and four 30-minute follow up appointments). Critically, the NHS physiotherapy outpatient tariff reimburses only the initial assessment appointment at £200; all subsequent follow up sessions are delivered without additional reimbursement. This funding structure creates a significant cost efficiency gap: for every RCRSP patient receiving five contacts, the four follow up sessions represent unfunded clinical activity, reducing overall service productivity and diverting capacity away from new referrals.

The GRASP trial (Getting it Right: Addressing Shoulder Pain; Hopewell et al., 2021) was a pragmatic, multicentre randomised controlled trial that compared a progressive exercise programme with a best practice advice approach, with and without a corticosteroid injection, for adults with rotator cuff disorders. The trial found that a single face to face physiotherapy session incorporating structured exercise advice was no less effective in improving patient outcomes than a programme of up to six supervised sessions, while being considerably more cost effective. This landmark finding challenges the conventional model of repeated outpatient follow up for this patient group.

Building on the GRASP evidence base, a service evaluation in another West Midlands NHS trust (Wallace et al., 2025) implemented the GRASP methodology alongside a three-month Patient Initiated Follow Up (PIFU) model. This evaluation demonstrated that the approach had the potential to significantly unlock clinical capacity and was highly acceptable to patients, as evidenced by positive patient reported experience measures (PREMs). PIFU in which patients re access services on the basis of clinical need rather than prescheduled appointments aligns with NHS England guidance on reducing unnecessary outpatient activity (NHS England, 2020b) and supports a shift towards more patient centred, demand led care.

The NHS Net Zero report (NHS, 2020a) commits the NHS to reaching net zero carbon emissions by 2040 for direct emissions, and by 2045 for the wider supply chain. Patient travel is a significant contributor to the NHS carbon footprint, accounting for a substantial proportion of the 10% of total NHS emissions attributable to patient, visitor and staff travel (Tennison et al., 2021). For outpatient physiotherapy services which require minimal equipment, medication or energy-intensive

procedures, patient journeys to and from appointments represent a particularly important source of avoidable emissions. The SWFT Green Plan (SWFT, 2025) sets out the Trust's commitment to embedding sustainability across all services. Reducing the number of face-to-face RCRSP contacts from five to one per patient episode is directly aligned with this plan. Based on an average of 1137 RCRSP patients per year, reducing follow up contacts by four per patient represents a potential reduction of around 4500 outpatient appointments annually each of which requires a patient journey to and from the clinic location.

Furthermore, the SWFT outpatient physiotherapy department currently faces significant Referral to Treatment (RTT) waiting list pressures. Implementing a GRASP aligned single session model with digital self-management support has the potential to free substantial clinical capacity, enabling more new patients to be assessed and treated more promptly, thereby improving RTT performance and reducing health inequalities associated with delayed treatment.

In summary, the current RCRSP pathway at SWFT delivers more face-to-face contacts than the evidence supports, at a financial cost to the service, an environmental cost through patient travel, and a social cost through the time and inconvenience burden placed on patients and their carers/family. The introduction of a GRASP aligned single session education and self-directed exercise pathway, supported by a bespoke digital platform for remote monitoring and patient engagement, presents an opportunity to improve the efficiency, sustainability, and patient centredness of the service while maintaining or improving clinical outcomes.

Specific Aims:

By 15/06/2026 introduce and evaluate a single session education and self-directed exercise pathway for RCRSP within the MSK Physiotherapy service, reducing average face-to-face contacts from 5 to 1 per patient, while maintaining or improving clinical outcomes and reducing carbon emissions associated with hospital attendances.

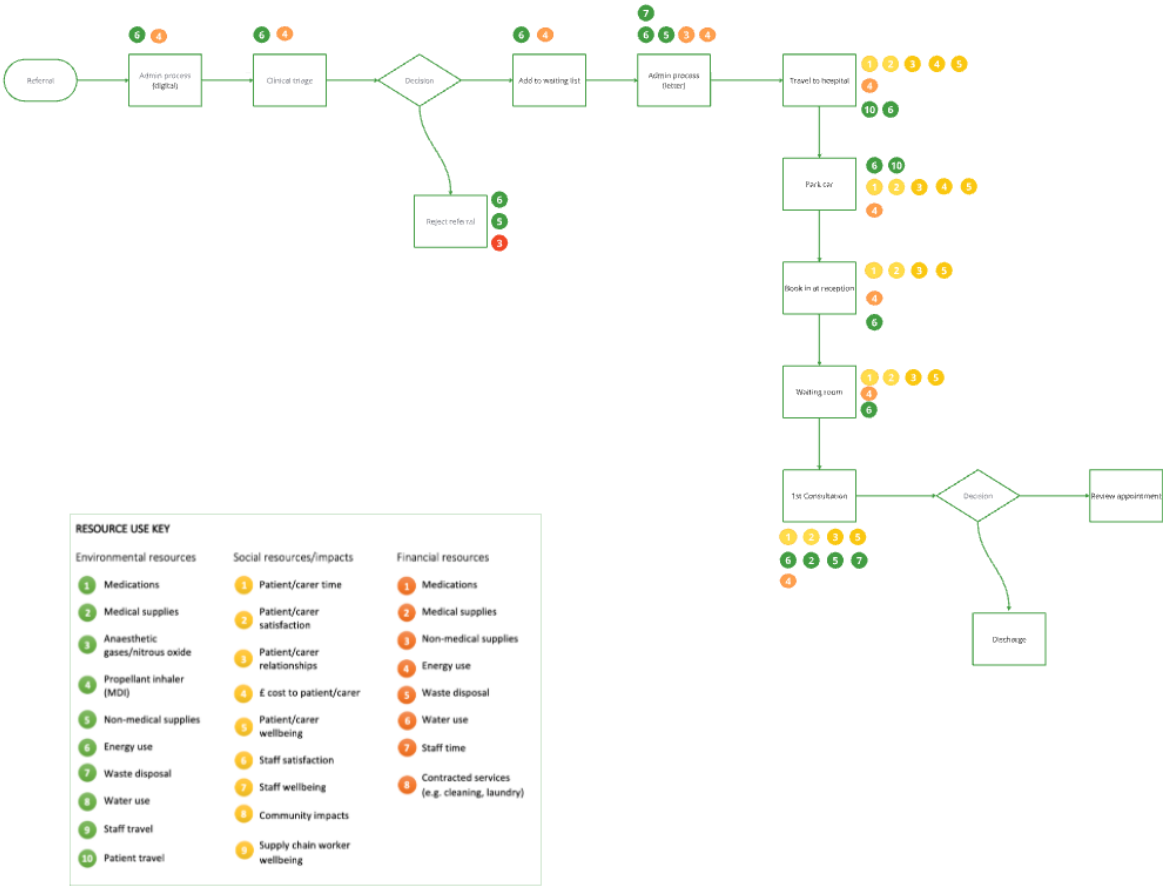
Methods:

Process mapping:

Under the current pathway, patients referred with RCRSP to the SWFT MSK Physiotherapy service are triaged and booked for an initial 45-minute face to face assessment appointment. Following assessment, on average, patients receive up to four further 30-minute follow up appointments,

resulting in a mean of five face to face contacts per episode of care. Appointments are booked by the administrative team and delivered across 4 hospital sites and 2 satellite clinics.

Figure 1: Process Map – current pathway



The new pathway is modelled on the GRASP trial methodology (Hopewell et al., 2021). Patients diagnosed with RCRSP referred by a trusted assessor working in primary care, receive a single extended face to face appointment incorporating structured education about shoulder pain, a personalised progressive exercise programme, and supported self-management advice. This replaces the previous model of repeated follow up appointments.

Following the single session, patients are supported for a three-month period via a Patient Initiated Follow Up (PIFU) model, in which they may recontact the service if their condition deteriorates or they have concerns. Criteria for clinical review within the PIFU period include failure to progress with the exercise programme, significant symptom deterioration, or clinical indicators warranting further investigation.

Figure 2: Process Map – new pathway

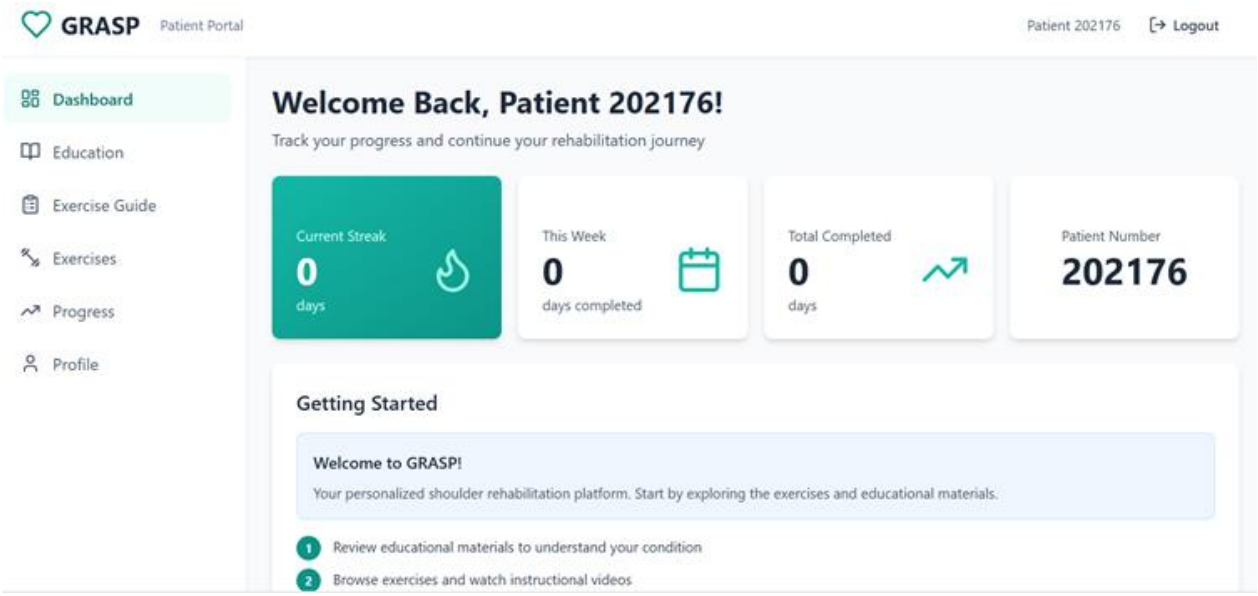
Digital platform use:

Remote monitoring and patient engagement between the single session and any potential PIFU contact is supported by a digital platform. The platform was created by AS using bolt.ai mobile app builder, information and exercises mirroring patient resources provided by the GRASP trial were embedded in the platform. Resources were made available by the GRASP trial and Exeter University open access. At the initial appointment, the treating physiotherapist guides the patient through downloading and setting up the platform as an application on their personal smartphone. Each patient is assigned a unique, anonymised login code, meaning no personally identifiable data is stored within the app itself. A password protected spreadsheet held securely within the service links each anonymised app profile to the corresponding patient record, ensuring clinical oversight while maintaining data privacy. This approach was determined to raise no significant GDPR concerns, as no personal data is processed or stored by the platform.

On a weekly basis, patients use the app to record their exercise activity. The Shoulder Pain and Disability Index (SPADI) and the Person Specific Functional Scale (PSFS) scale are administered through the app at defined intervals. The SPADI is a validated, patient reported outcome measure

for shoulder pain and functional disability (Roach et al., 1991), and the PSFS provides a simple measure of the patient's overall perception of change from their baseline condition.

Figure 3: Digital platform interface



To avoid digital exclusion, a paper-based alternative has been developed for patients who are unable or unwilling to use the digital platform, including those without a smartphone, those with cognitive impairment, and those with visual or physical difficulties. These patients receive equivalent written materials, a paper exercise diary, and paper versions of the SPADI and PSFS questionnaires to be returned to the service by post or at any follow up contact. This ensures equitable access to the new pathway regardless of digital literacy or technology access, and that no patient is disadvantaged by the introduction of the new model.

The new pathway is being introduced initially as a pilot at the Stratford upon Avon (SOA) outpatient physiotherapy site, with the intention of wider rollout to other SWFT physiotherapy sites following evaluation. The pilot applies to all new RCRSP referrals assessed at SOA from June 2026, subject to prior clinical assessment by a trusted assessor in primary care. Patients with presentations indicating a need for ongoing supervised management for example, significant psychosocial flags, complex comorbidities, or diagnostic uncertainty continue to be managed on an individualised basis outside the standard pathway.

Staff education sessions were delivered to the physiotherapy team at SOA prior to the pilot launch, covering the GRASP evidence base, the new pathway structure, use of the digital platform, administration of the SPADI and PSFS outcome measures, and the paper-based backup process. The administrative team were briefed regarding the reduction in follow up appointment bookings and the implications for their workflow.

Stakeholder analysis:

A stakeholder analysis was conducted using the 9C's framework to identify all individuals and groups involved in or affected by the pathway change. Stakeholders were mapped according to their level of power and the degree of impact the change would have on them, resulting in four engagement categories as summarised in Table 1 below.

Table 1: Stakeholder mapping

HIGH POWER	**Satisfy**: Opinion formers. Keep them satisfied with what is happening and review your analysis of their position regularly. Kimberley Pulley Tim Carter Trust improvement / trust sustainability teams	**Manage**: Key stakeholders who should be fully engaged through communication and consultation. Gaurav Sharma Physiotherapists at SOA Pete Walford FCP/SWIMS team (referral source)
LOW POWER	**Monitor**: Peripheral. This group may be ignored if time and resources are stretched Wibbi support Physiotherapy assistants	**Inform**: Supporters. Patients often fall into this category. It may be helpful to take steps to increase their influence by organising them into groups or taking active consultative work. Patients Administrative team Physiotherapy teams at other sites
	LOW IMPACT ON STAKEHOLDER	HIGH IMPACT ON STAKEHOLDER

Measurement:

This section outlines the metrics that were and will be collected to evaluate the impact of the new pathway across four domains: patient outcomes, social sustainability, environmental sustainability, and economic sustainability. Data collection is ongoing; no post intervention results are available at the time of writing as patients are currently being recruited onto the new pathway, therefore results were modelled based on the previous 12-months of referrals.

Clinical measures:

The primary measure of pathway effectiveness will be the proportion of patients on the new pathway who do not require any follow up face-to-face appointment following their single initial session. The results were modelled based on the findings of Wallace et al. (2025), with a target of 80% of patients completing the pathway without further face-to-face contact set as the benchmark for success. This was reported as a percentage of all patients enrolled onto the new pathway during the pilot period and compared against the historical average of five contacts per episode under the previous pathway.

SPADI (Shoulder Pain and Disability Index): SPADI scores will be collected at two time points for patients on the new pathway: at baseline (initial appointment) and at three months (end of the PIFU period). As the SPADI was not routinely collected under the previous pathway, this will be a prospective measure only, with no historical comparator. The SPADI is scored from 0 to 100, where lower scores represent less pain and disability; clinically meaningful improvement is defined as a reduction of 18 points or more (Schmitt et al., 2004). It is anticipated that patients on the new pathway will demonstrate clinically meaningful improvement at three months, consistent with the evidence from the GRASP trial (Hopewell et al., 2021).

Person Specific Functional Scale (PSFS): PSFS scores will be collected at three months for patients on the new pathway and compared against historical PSFS data collected under the previous pathway. This will allow a direct comparison of patients perceived overall improvement between the two pathway models. Historical PSFS data is being collated from existing service records for this purpose.

Referral to treatment and waiting list times: Referral to treatment (RTT) times and overall waiting list volumes were monitored informally throughout the pilot period. While not a formal outcome measure for this project, any observed reduction in waiting list pressure at SOA following implementation of the new pathway were noted and discussed in the Results section.

Environmental measures:

Data was collected for patients presenting on the existing pathway with RCRSP from January 2023 to October 2025 as summarised in Table 2 below. Data for the new pathway was modelled based on this data from the existing pathway.

Table 2: Components of existing and new rotator cuff related shoulder pain pathways

	Pathway 1 (existing pathway) Percentage of patients	Pathway 2 (new pathway) Percentage of patients
Number of assessments	1137 (yearly average)	1137 (yearly average)
Visit 1: Single assessment	100%	100%
Visit 2-5: Therapy follow up appointments	100% require 4 follow up appointments	10% estimated to require 1 follow up appointment
Phone call		100% at 3 months; 20% may have PIFU earlier
Average travel distance	15.14 miles	15.14 miles

A cradle to grave hybrid approach carbon footprint analysis was used to estimate the items' greenhouse gas (GHG) emissions. Any costs were analysed using the Environmentally Extended Input Output Analysis (EEIOA). The carbon footprint of waste disposal was based on Rizan et al., 2021 carbon footprint of high temperature incineration. A process-based carbon footprint analysis was carried out for patient travel, based on the patient travel survey conducted. The analysis included GHG emissions associated with primary materials production, transport, and disposal.

Any material data for consumables was analysed through a process-based approach. It was converted into GHG emissions using carbon conversion factors from the 2025 UK Government Greenhouse Gas Conversion Factors database (DESNZ, 2025). For end-of-life treatment, disposable equipment was assumed to be disposed of as clinical waste, while the packaging waste was assumed to be dry mixed recyclable with the corresponding emission factors taken from Rizan et al., 2021. The assumption was made that on average each patient received four sheets of printed information in the existing pathway, and all patient information was digital in the new pathway.

The patient travel emissions were based on miles driven per patient return journey, using a factor of 0.243 $kgCO_2e$ per mile, as published by the Department for Transport National Travel Survey (Department for Transport, 2025). This factor is inclusive of fuel and well to tank emissions. The average one-way patient travel distance was determined using data from a short patient survey conducted with a small cohort of 16 patients, with results extrapolated to represent the wider population. A return journey distance of 15.14 miles per attendance was used in all calculations.

Population level outcomes were not formally measured as part of this pilot, given the constraints of service evaluation data and the relatively short timescale of the project. However, the following population level considerations were discussed in the results section, drawing on existing evidence where available:: the impact of reduced waiting times on timely access to care across the RCRSP population; the potential benefit to patients with comorbidities or transport difficulties who would previously have had to attend multiple appointments; and any differential impact of the digital pathway on patients who are less able to engage with the digital platform, including older adults, those with cognitive impairment, and those without smartphone access.

Economic measures:

The following economic metrics were measured and reported, using staff cost data sourced from the PSSRU Unit Costs of Health and Social Care (Jones et al., 2024) and procurement data from the Trust where applicable.

Staff time per episode of care: The cost of physiotherapist and administrative staff time was calculated for both the current and new pathways, based on appointment durations and PSSRU unit costs for two band 6 and one band 8a physiotherapists and band 2/3 administrative staff. As the NHS tariff reimburses only the initial £200 assessment appointment, the financial efficiency gain from eliminating unfunded follow up contacts was highlighted. This was expressed as a staff time efficiency saving per patient episode and projected across the annual RCRSP patient volume.

Digital platform licence cost: The annual licence cost of the digital platform was divided by the number of RCRSP patients seen per year to calculate a cost per patient episode, enabling this implementation cost to be set against the savings achieved.

Resistance band and paper costs: The cost of resistance band provision and paper printing pre and post pathway change was recorded and compared. It is noted that the shift to patients purchasing their own resistance band represents a cost transfer from the Trust to the patient rather than a net saving, and this was reflected in the social sustainability analysis.

Social measures:

Social sustainability metrics were collected across three groups: patients, staff, and carers. These included both quantitative and qualitative data where available.

Patient time and financial savings: The time saved by patients from not attending multiple hospital appointments was estimated, including travel time and appointment duration, and expressed as potential lost earnings avoided using the current National Living Wage rate (HMRC, 2025). Travel and parking cost savings were also estimated per patient episode.

Patient satisfaction: Patient feedback on the new pathway will be collected prospectively, including qualitative comments on their experience of the single session model and PIFU. Any concerns about perceived reduction in care quality will be noted.

Staff experience: A pre implementation staff survey has been conducted to establish baseline views on the current pathway. A follow up survey will be conducted after a period of running the new pathway to assess whether staff perceive improvements in the value and efficiency of their working time, and whether the change has positively affected their sense of alignment with the Trust's sustainability goals.

Negative social impacts: The number of patients requiring the paper based alternative pathway was recorded as a proxy measure of digital exclusion. The additional cost to patients of purchasing their own resistance band was noted as a negative social impact of the pathway change and considered in the overall social value assessment.

Results:

As the pilot is in its early stages and patient recruitment is ongoing, no clinical outcome data was available. The results presented below are therefore modelled projections based on the RCRSP patient volume across the trust annually (n = 1,137 per year). All assumptions are stated explicitly. Actual results will be reported when sufficient data have been collected.

Based on the findings of Wallace et al. (2025), it was modelled that approximately 80% of patients on the new pathway would complete their episode of care without requiring any face to face follow up appointment. The remaining 20% were modelled to require a single follow up contact, either face to face or via telephone. It is estimated that SOA receive approximately 30% of the total SWFT RCRSP referral volume, equating to around 341 patients per year. This represents a reduction from 1,364 follow up appointments per year to 68, a reduction of 1,296 appointments annually. If rolled out across all SWFT sites (n = 1,137 patients per year), this would represent a reduction of 4,321 follow up appointments per year service wide.

No negative patient outcomes are predicted. The GRASP trial (Hopewell et al., 2021) demonstrated non inferiority of the single session approach compared to a multi session programme for rotator cuff disorders, and the Wallace et al. (2025) service evaluation found high patient acceptability. It is therefore anticipated that SPADI scores at three months will demonstrate clinically meaningful improvement (reduction of ≥18 points from baseline), and that PSFS scores will be comparable to or better than those recorded under the previous pathway. Baseline SPADI data and historical PSFS comparator data are being collected and will be reported in due course.

The reduction in follow up appointments is also expected to reduce referral to treatment (RTT) waiting times, as clinical capacity freed from RCRSP follow up appointments can be redirected to new patient assessments. Based on the modelled staff time saving (see Economic Sustainability below), the equivalent of approximately 750 additional new patient assessment slots (at 45 minutes each) could theoretically be created per year at SOA from the clinical hours freed. Across the full service, this rises to approximately 2,501 additional slots per year. In practice these gains will be realised incrementally as the pathway embeds.

The reduction in follow up demand is expected to have a positive population level impact by improving access to the service for all MSK patients, not just those with RCRSP. By freeing clinical capacity currently absorbed by unfunded RCRSP follow up appointments, the service will be better placed to reduce waiting times across the wider MSK caseload, benefiting patients with a range of conditions who may currently be waiting longer than clinically desirable for an initial assessment.

For specific patient subgroups, the new pathway is anticipated to deliver additional population level benefits. Patients with comorbidities, mobility limitations, or transport difficulties who may previously have relied on family members or carers to attend multiple hospital appointments will benefit from the reduction in required attendances. Similarly, working age patients will experience less disruption to employment. No patient groups are anticipated to experience worse clinical outcomes because of the change, given the strength of the underpinning evidence. Patients unable to use the digital platform will continue to receive equivalent care via the paper based alternative pathway.

Environmental results:

Carbon emissions associated with patient travel for the physiotherapy assessment and treatment pathway were calculated for two models of care (Pathway 1 and Pathway 2), as shown in Tables 3 and 4, based on 1,137 patients per year using the service. The average one-way travel distance for the car-using patient cohort was 7.57 miles per attendance, derived from a small sample of 16 patients (see Appendix 1), giving a return journey distance of 15.14 miles per attendance. The analysis demonstrated a substantial reduction in emissions following the redesign of the patient pathway.

Table 3: Carbon emissions associated with pathway 1 (current pathway)

	Pathway 1	**Emissions ($kgCO_2e$)**
Number of patients	1137	
Travel – miles per patient per visit	15.14	
Number of visits	5	
Emissions per mile (DfT patient survey)	0.243	20,886.19
Paper - sheets	4	
Emissions per sheet	0.00649488	29.54
Total		**20,915.73**

Table 4: Carbon emissions associated with pathway 2 (new pathway)

	Pathway 2 **Percentage of patients**	**Emissions ($kgCO_2e$)**
Number of patients	1137	
Travel – miles per patient per visit	15.14	
Number of visits	1	
Emissions per mile (DfT patient survey)	0.243	4,177.24

Duration of follow up phone call (mins)	30	
Emissions per min for phone call	0.004634877	158.10
Amount of time patient spends on digital platform per episode of care	2.5 hours	240.32
Follow up face to face appointment	10% of those who contact PIFU earlier than 6 months	417.72
Total		**4,993.38**

In Pathway 1, patients attend multiple separate visits for assessment and ongoing treatment. Under this pathway, 100% of patients attend five separate visits for treatment. The total yearly carbon emissions associated with patient travel and paper use for Pathway 1 were 20,915.73 $kgCO_2e$.

Pathway 2 was redesigned to reduce the number of visits required. Under this model, assessment is performed once. Treatment is via a digital platform, reducing repeat travel. Patients can use patient initiated follow up (PIFU) and attend for a second visit only where necessary, estimated at 10% of patients. All patients receive a phone call by the end of their self-directed digital treatment plan. For all patients combined over a one-year period, first outpatient visits contributed 4,177.24 $kgCO_2e$. Use of the app contributed 240.32 $kgCO_2e$, telephone calls to patients accounted for 158.10 $kgCO_2e$, and follow-up appointments where required contributed a further 417.72 $kgCO_2e$. The total yearly carbon emissions for Pathway 2 are 4,993.38 $kgCO_2e$.

Transitioning from Pathway 1 to Pathway 2 is modelled to result in a **yearly saving of 15,922.35 $kgCO_2e$,** representing a 76% reduction in carbon emissions. This reduction is driven primarily by the elimination of repeat patient travel through the introduction of a digital platform to treatment plan. The streamlined pathway therefore delivers a clear environmental sustainability benefit while maintaining clinical care standards.

Economic results:

Staff time costs have been modelled using PSSRU Unit Costs of Health and Social Care 2023 (Jones et al., 2024), applying a band 6 physiotherapist hourly rate of £55 (inclusive of on costs and overheads), a band 8a physiotherapist hourly rate of £75, and an estimated band 2/3 administrative staff rate of £22 per hour. Under the current pathway, each patient episode requires approximately 2 hours 45 minutes of clinical time and 25 minutes of administrative time, at an estimated cost of £160.42 per patient. Under the new pathway, clinical time comprises a 1-hour band 6 initial session plus an average of 5 minutes accounting for the 20% of patients who receive a 30-minute band 6 PIFU call, alongside a 30-minute band 8a telephone review at 3 months for all patients, with 10 minutes of administrative time, at an estimated cost of £101.67 per patient.

Modelled annual staff time efficiency saving: £58.75 per patient, equating to saving approximately **£20,034 per year at SOA (341 patients), rising to approximately £66,808 per year if rolled out across the full SWFT service (1,137 patients).** It is important to note that this represents a staff time efficiency gain rather than a direct financial saving: the Trust will not employ fewer physiotherapists because of the change. Rather, the clinical hours freed from unfunded RCRSP follow up appointments — estimated at 563 hours per year at SOA (1,876 hours service-wide) — equivalent to approximately 750 additional new patient assessment slots at SOA (2,501 service wide), can be redirected to new referrals for which the Trust does receive income. **The revenue potential from this capacity release** at SOA alone, should the freed slots be filled with new patients, would be in the region of **£150,000 per year**, **rising to approximately £500,000 per year across the full service**, though this depends on referral demand and service configuration.

The annual licence cost of the digital platform (£20.00) represents the primary implementation cost. Divided across 341 patients per year at SOA, this equates to a cost of £0.06 per patient episode. Paper and printing costs are expected to fall from approximately £27.28 per year at SOA (£90.96 service wide) to a negligible amount, as printed materials will only be provided to patients unable to use the digital platform.

Social results:

Patient time and financial savings. Under the current pathway, each patient spends an estimated 5.28 hours in total attending appointments, including travel time (assuming a mean return journey time of approximately 30 minutes at an average speed of 30mph over 15.14 miles). Under the new pathway, total time commitment reduces to an estimated 4.21 hours per patient, which includes the

longer initial appointment, the time spent using the digital platform (estimated 2.5 hours over the episode), and travel for the 20% who attend a follow up. This represents a time saving of approximately 1.08 hours per patient. Expressed in terms of the National Living Wage (£12.21/hr, HMRC 2025), this equates to a potential earnings equivalent saving of £13.13 per patient, or approximately £4,477 per year at SOA (£14,929 per year across the full service).

Travel and parking cost savings. For patients travelling by car (81%), each visit costs an estimated £13.78 (15.14 miles at £0.58/mile plus £5 parking). Under the current five visit pathway, the weighted average travel cost per patient is approximately £38.10. Under the new pathway this reduces to approximately £9.14, a saving of £28.96 per patient. Across the annual SOA cohort, this represents an estimated saving of £9,875 per year to patients and their carers in travel and parking costs. Across the full service this rises to approximately £32,925 per year.

Beyond financial savings, patients and carers will benefit from reduced disruption to daily life, including less time off work, reduced reliance on family members for transport, and less need to arrange childcare. Staff are anticipated to benefit from a more efficient use of their clinical time, with follow up appointments replaced by higher value initial assessments. The administrative team will experience a reduction in appointment booking and reminder workload, estimated at a saving of 15 minutes of admin time per patient episode (£5.50 per patient at £22/hr).

Two potential negative social impacts have been identified. First, patients are now required to purchase their own resistance band (approximately £7.99 per set), representing a cost transfer from the Trust to the patient. Whilst modest, this may represent a barrier for patients on low incomes and is acknowledged as an equity concern. Second, patients who are less comfortable with digital technology may feel less supported on the digital based pathway; however, the paper-based alternative is in place to mitigate this risk. Some patients may also initially perceive the reduction in face-to-face contact as a reduction in the quality of care they receive; patient education at the initial appointment, grounded in the GRASP trial evidence, will be important in addressing this perception.

Discussion:

The introduction of a GRASP aligned single session education and self-directed exercise pathway for RCRSP at the SOA pilot site is projected to deliver meaningful improvements across all four sustainability domains. Clinically, 80% of patients are anticipated to complete their episode of care without any follow up face-to-face contact, with no predicted deterioration in patient outcomes

relative to the previous multi session model. This projection is strongly supported by the GRASP trial (Hopewell et al., 2021) and the service evaluation conducted by Wallace et al. (2025).

Environmentally, the reduction from five to one face to face contact per patient episode is modelled to save 15,920 $kgCO_2e$ per year across the full SWFT service if the pathway is rolled out, with 4,780 $kgCO_2e$ attributable to the SOA pilot site alone, a 76% reduction in the carbon footprint associated with patient travel. Economically, the pathway is projected to free 563 clinical hours per year at SOA, equivalent to 750 additional new patient assessment slots, and to generate a staff time efficiency saving of approximately £20,034 per year at SOA (£66,808 service wide).

Socially, patients stand to save an estimated £42.09 per episode in travel and parking and time costs, representing a collective **social saving of £14,353 per year at SOA**, alongside a reduction in time burden and disruption to daily life.

Barriers and Challenges:
Several challenges were anticipated and encountered during the planning and early implementation phases. A key cultural barrier is the potential for patients to perceive the reduction in face-to-face contact as a downgrade in care quality. This risk is being mitigated through patient education at the initial appointment, grounded in the GRASP trial evidence, and through the availability of PIFU should patients have concerns during their three month follow up period. Staff attitudes to the change were generally positive, underpinned by familiarity with the GRASP evidence base; however, embedding consistent delivery of the single session model across a team with varying clinical experience and banding required dedicated training and ongoing clinical support.

The digital nature of the pathway introduced a logistical challenge around ensuring equitable access. Not all patients will be comfortable or able to use a digital platform, and the paper-based alternative pathway was developed specifically to address this. The number of patients requiring the paper-based alternative will be monitored as part of the pilot evaluation to understand the scale of digital exclusion within this patient group. The RCRSP demographic at SWFT is predominantly working age and likely digitally literate, which mitigates this risk to some extent, but it remains an important equity consideration.

One unexpected consequence of the pathway change has been the environmental impact of resistance band provision. The transition from bulk Trust procurement to individual patient purchase

has introduced incremental home delivery emissions that were not initially anticipated. As noted in the results section, supplying resistance band for purchase directly through the Trust at cost price would resolve this issue while remaining financially neutral, and this is recommended as a next step.

The absence of SPADI data from the previous pathway means that direct comparison of patient reported outcome measures between the two pathways will not be possible for this cohort. PSFS historical data is being retrieved to allow a partial comparison, but this limitation should be acknowledged when interpreting outcome data. Future embedding of routine SPADI collection from the outset of any MSK physiotherapy episode would strengthen the evidence base for subsequent evaluations.

Risks:

The primary clinical risk is that a proportion of patients on the new pathway will not improve sufficiently with a single session and self-directed exercise and may experience a delay in receiving additional support compared to the previous model. This risk is mitigated by the PIFU mechanism, which allows patients to reaccess the service promptly if needed, and by staff monitoring of digital data to identify patients who are not progressing. The probability of this risk is considered low given the strength of the underpinning evidence, but the impact on individual patients could be significant if clinical deterioration goes undetected; robust staff engagement with the digital monitoring function is therefore essential.

A secondary risk is that the modelled efficiency savings are not fully realised in practice, either because the proportion of patients requiring follow up exceeds the anticipated 20%, or because freed clinical capacity is not redirected to new referrals due to operational constraints. The pilot data will be closely monitored to assess whether the 80% assumption holds in the SWFT population, and projections will be updated accordingly.

Wider Applicability and Spread:

The GRASP aligned pathway is directly transferable to the other SWFT MSK physiotherapy sites and satellite clinics. Rollout beyond SOA is planned following evaluation of the pilot, with the projected service wide savings representing a compelling case for adoption. The pathway model is also relevant to any NHS MSK physiotherapy service managing a significant RCRSP caseload, and the approach taken at SWFT combining a single session education model, digital remote monitoring, PIFU, and a paper-based equity backup provides a replicable template that other Trusts could adapt.

Sharing findings at regional and national physiotherapy networks and through publication in peer reviewed literature would support wider dissemination.

The principles underpinning this project single session evidence-based intervention, digitally enabled self-management, PIFU, and reduction of unnecessary face-to-face contact are also applicable to other high volume MSK conditions where similar evidence exists. Consideration could be given to whether analogous pathways could be developed for other commonly treated conditions within the SWFT MSK caseload, building on the infrastructure and learning generated by this pilot.

Conclusions:

This project has demonstrated that the implementation of a GRASP aligned single session education and self-directed exercise pathway for RCRSP within the SWFT MSK Physiotherapy service is feasible, evidence based, and projected to deliver significant benefits across clinical, environmental, economic, and social domains. The pathway directly addresses the current service challenge of delivering a mean of five face-to-face contacts per RCRSP patient episode in the absence of evidence to support this level of input, and at a financial cost to the service that is not recouped through the NHS tariff.

The key elements that have contributed to the successful initiation of this project are: a strong and well established evidence base in the form of the GRASP trial and the Wallace et al. (2025) service evaluation; clear alignment with both national NHS sustainability ambitions and the SWFT Green Plan; engaged clinical leadership; a pragmatic and equity conscious implementation approach that includes a paper based alternative for patients unable to use the digital platform; and effective stakeholder engagement across management, clinical, and administrative teams.

The key learning from areas that have not proceeded as smoothly includes the importance of establishing baseline outcome measure collection (particularly SPADI) from the outset of any service change, to enable robust pre and post intervention comparison. The unintended environmental consequence of the resistance band provision change also highlights the value of examining all components of a pathway change for sustainability implications, not only the primary intervention.

Steps taken to ensure lasting change include embedding the new pathway within standard operating procedures at SOA, integrating SPADI and PSFS data collection into the routine clinical workflow via the digital platform, and establishing a regular staff review process. The pilot evaluation findings will

be presented to the SWFT MSK Physiotherapy management team and Trust improvement and sustainability leads, with a view to agreeing a timetable for rollout to the remaining SWFT sites. The project team also intends to share findings at regional physiotherapy networks and to consider submission to a peer reviewed journal, in order to contribute to the wider evidence base for sustainable MSK physiotherapy service delivery.

In conclusion, this project represents a clinically sound, environmentally responsible, and socially equitable quality improvement initiative that is well positioned to deliver lasting benefit to patients, staff, and the wider health system. The pilot at SOA provides a strong foundation from which to scale, and the SWFT MSK Physiotherapy service is committed to building on this work to create a more sustainable and effective model of care for patients with RCRSP.

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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 ☐ 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) X☐ Support from senior organisational or system leaders	X☐ clear guidance / evidence / policy to support the intervention. ☐ Incentivisation of the strategy – e.g., QOF in general practice ☐ 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	X☐ Dedicated time ☐ QI training / information resources and organisation process / support ☐ Infrastructure capable of providing teams with information, data and equipment needed ☐ Research / evidence of change successfully implemented elsewhere ☐ Financial investment	X☐ aims aligned with wider service, organisational or system goals. ☐ Links to patient benefits / clinical outcomes ☐ Links to staff benefits ☐ 'Permission' given through the organisational context, capacity and positive change culture.

Appendix 1: Prospective mapping of distance from patient home address to SOA (convenience sample)

Patient	Distance	Mode of transport
1)	4.7 miles	car
2)	6.4 miles	car
3)	0.8 miles	walk
4)	8.7 miles	car
5)	5.0 miles	car
6)	6.2 miles	car
7)	0.3 miles	walk
8)	12.0 miles	car
9)	8.0 miles	car
10)	4.8 miles	car
11)	1.8 miles	car
12)	7.1 miles	car
13)	13.0 miles	car
14)	12.0 miles	car
15)	1.2 miles	walk
16)	8.7 miles	car