BEPOP Benchmarking Exercise Programme for Older People

Wave 2 Report

2025

Contents

Executive summary

Background:

The Benchmarking Exercise Programme for Older People (BEPOP) project is a UK-wide service improvement initiative. It uses a benchmarking and feedback model to identify and promote areas of good practice in the prescription of exercise for older people living with sarcopenia and frailty, in order to support continuous service development and hence improved outcomes for older people.

Methods:

Twenty-eight NHS therapy services across the UK, providing exercise interventions to older people likely to have sarcopenia or frailty, took part in the second Wave of data collection. We asked for sites to submit data on 20 consecutive patients accessing services between July 2024 and January 2025.

Results:

Twenty-eight sites submitted data for 542 patients with an average age of 82 years (range 60-104 years). Compared to wave 1, we found improvements in the percentage of patients receiving diagnostic evaluation for sarcopenia at the start of their course of therapy (41% vs 17%), progressing the intensity of resistance exercise (41% vs 26%) and receiving reassessment of strength during therapy (38% vs 32%). We found a slightly lower percentages of patients receiving an objective assessment of strength (51% vs 61%) and receiving any form of resistance exercise training (92% vs 98%). We found no change in the percentage of patients offered referral or signposting to other exercise services after their course of therapy (44% vs 41%). Improvements were more marked for those sites taking part in Wave 2 who also took part in Wave 1.

Conclusions:

We found encouraging signs of improvement for some, but not all recommendations made in BEPOP wave 1. Further improvement is needed but these improvements suggest that the BEPOP benchmarking and feedback method, combined with development of a learning community of practice, can drive meaningful improvements in the quality of resistance exercise deliver for older people with sarcopenia or frailty.

Next steps:

We plan to disseminate this report widely, along with tailored, individualised feedback to each participating site. We will continue to support sites to improve their practice in the light of these findings via webinars and conference presentations to educate, to share good practice, and to promote the learning community of practice that is evolving around BEPOP. Finally, we will continue to expand the number of sites taking part in BEPOP; Wave 3 is now under way and we anticipate reporting Wave 3 results in Spring 2026.

Key Recommendations

Building on the five key recommendations made following BEPOP Wave 1, we have added a number of specific *enabling recommendations* to further support service improvement:

1. **Assessment:** All older people referred for exercise programmes should be assessed using an **objective strength-based assessment method**, such as five times sit-to-stand test, before starting an exercise programme.

2. **Diagnosis: Probable sarcopenia can be diagnosed**, as per EWGSOP guidelines and diagnostic cut-offs, using objective strength-based assessment methods (by measuring grip strength AND five times sit-to stand test). This should be clearly documented and shared with the patient's GP.

3. **Exercise prescription: Progressive resistance exercise training** should be included in exercise prescriptions for older people living with sarcopenia (probable or confirmed) or frailty.

4. **Progress and Re-assess:** Resistance exercises should be **progressed by increasing intensity of exercises** (e.g. greater weight, stronger therabands), not just by increasing the volume of exercises.

   At the end of an exercise programme, all older people should **be re-assessed using the same objective strength-based assessment method** that was used at baseline (paired outcome assessment), to assess progress and guide ongoing prescription.

5. **Take forwards:** All older people completing an exercise programme should be **offered signposting, or referral onwards to ongoing exercise services** where possible.

Enabling recommendation

a) Handgrip dynamometers should be **made available to all practitioners** to facilitate muscle strength measurement
b) Staff undertaking strength assessment should be **trained to do so**, with training documented in departmental training logs
c) All services should **define and document an onward referral pathway** for people with sarcopenia or frailty with local NHS, private and third-sector exercise services (including documenting if a patient has declined onward referral)

Introduction

Sarcopenia (the age-related loss of muscle mass and strength) and physical frailty are both associated with a range of adverse outcomes including falls, hospital admission, dependency and need for care, as well as earlier death and worse quality of life [1,2]. The harmful impact that these conditions can have for older people is widely recognised and was a key focus of the latest Getting It Right First Time (GIRFT) report on Geriatric Medicine [3]. Maximising strength is a vital component of preventing future illness, dependency, health and social care utilisation and thus provides a powerful tool in enabling the shift from treatment to prevention championed by the UK Government's 10-year health plan.

Good evidence exists to show that resistance exercise is an effective intervention to treat sarcopenia and frailty [4], yet we know that this treatment is not always offered. A survey conducted in 2019 by the British Geriatrics Society (BGS) showed that most exercise programmes delivered to older people living with sarcopenia and frailty focus on falls prevention and reduction, with only 9% having a primary focus of resistance training [5]. Furthermore, less than half of respondents were using appropriate strength-based outcome measures such as hand-grip strength or chair stands to assess the effectiveness of the programme [5].

BEPOP aims and design

BEPOP aims to continuously improve and implement a UK-wide **benchmarking and feedback system** to determine and promote exercise training characteristics that are most associated with positive outcomes for older people living with sarcopenia or frailty.

By highlighting the features of exercise programmes associated with better outcomes, BEPOP provides the information practitioners need to refine and optimise their exercise prescription for older people living with sarcopenia or frailty. Data comparing different services (benchmarking) has been a powerful driver for quality improvement in other areas of clinical practice, such as hip fracture care in England [6]; benchmarking data can help build business cases for service improvement both locally and nationally.

Figure 1. The BEPOP improvement cycle

Recap on Wave 1 of BEPOP

In BEPOP Wave 1, ten NHS therapy services from across the UK submitted data from a total of 188 patients. Our key findings from Wave 1 were that:

- Sarcopenia was often not diagnosed
- Only 61% of initial assessments included an objective strength-based assessment
- Most patients (>90%) received some type of resistance training
- Exercises were mostly progressed by increasing volume, but only 26% were progressed by increasing intensity
- Only 32% of patients were reassessed using the same objective strength-based assessment performed at baseline
- Only 41% of patients were referred or signposted on to other exercise services after completing their therapy course.

Our first cycle of BEPOP created five key recommendations designed to support service improvement in exercise delivery for people living with sarcopenia or frailty in the UK (listed on page 4).

We published the results as a national report, in the Journal of Frailty, Sarcopenia and Falls [7] and we presented at national conferences including AGILE (the Professional Network for Physiotherapists working with Older People) Annual Conference and British Geriatrics Society Conference. We held a series of educational webinars and feedback events in collaboration with AGILE, including training on effective delivery of resistance exercise and opportunities for Wave 1 sites to share learning and changes that they had made in response to Wave 1 feedback.

Aim of BEPOP Wave 2

For BEPOP Wave 2, we sought to replicate the methods used in Wave 1 but aimed to bring in a larger number of sites (target 20-25), with minor modifications to the data collected. There was a specific focus on understanding what changes had occurred at sites who took part in both Waves of data collection.

Project methods

Service selection

As in Wave 1, we recruited NHS therapy services offering community-based exercise interventions to older people living with sarcopenia and frailty within the UK. We excluded services that were private, inpatient, outside the UK or had a disease specific focus.

We used similar criteria as for Wave 1, but with clarification that the programme sought inclusion of patients likely to have sarcopenia or frailty. We again asked services were to provide data on 20 consecutive patients who met the following criteria:

1. Aged 65 years or over.
2. Likely to have frailty or sarcopenia (for example, Rockwood Clinical Frailty Score of four or more, suspicion of sarcopenia or confirmed diagnosis of sarcopenia).
3. Received an exercise intervention delivered in an outpatient/community-based setting.
4. Not referred for a disease-specific intervention (for example pulmonary or cardiac rehabilitation).
5. Not referred for rehabilitation or early supported discharge following a stroke diagnosis.
6. Not referred for rehabilitation post-operatively.

We advertised BEPOP to sites through a range of different channels, including social media (AGILE, BGS, NIHR Newcastle Biomedical Centre), email contact lists (AGILE, BGS), fliers at conferences, and contact with sites who participated in Wave 1 with cascade to other local sites through personal contacts.

Data collection

We collected data from April 2024 to January 2025. Data were collected using a REDCap online data collection system hosted by Newcastle upon Tyne Hospitals NHS Foundation Trust. Sites anonymised data on entry and collected data in the following domains:

- Baseline details including:
    - Age
    - Baseline mobility
    - Presence of long-term conditions
    - Presence of sarcopenia
    - Rockwood Clinical Frailty Score (CFS)
- Referral to service – reason and source
- Initial assessment and planned interventions:
    - Aim of the intervention and goals set
    - Baseline assessments used
    - Planned duration and method of delivery, focussing on whether elements of resistance training were included
- Progression and Re-assessment, and whether this influenced change in the delivered program, again focussing particularly on aspects of resistance training
- Post intervention assessment, follow up and signposting
- Review of the programme and if it was completed as intended (in terms of both delivery and attendance) and reasons for discontinuing if not.

Answers to questions were either given as binary check box answers, multiple choice checkbox answers (with the ability to choose multiple options) or free text boxes. There was no qualitative component to data collection in Wave 2.

Data analysis

We exported data from RedCAP, which were cleaned and checked by the BEPOP analysis team and converted into Microsoft Excel format for descriptive analyses. Our analyses focussed on the five key recommendations from Wave 1 to enable comparison before and after issuing these recommendations to the wider physiotherapy community. As with Wave 1, each participating service received individualised feedback on their results compared with the Wave 2 results as a whole.

Results

Sites expressing interest

We received expressions of interest from 78 sites, of which 10 were involved in Wave 1. We excluded nine services (outside the UK or NHS; research-based services; inpatient services) and a further 30 failed to respond at this stage.

We invited 39 services were invited to participate in Wave 2. Of these, 33 services were able to obtain local Caldicott Guardian (or Personal Data Guardian if based in Northern Ireland) approval. During the data collection period two services withdrew due to time constraints and three services did not collect any data, leaving a total of 28 services who contributed data (seven of whom participated in Wave 1).

Contributing sites

Twenty-eight services providing community-based exercise interventions contributed to data for Wave 2 of BEPOP (Figure 2 and Table 1).

Figure 2. Map of participating service locations

Yellow pin denotes service that also took part in Wave 1

Table 1. Participating services in BEPOP Wave 2

Armour Complex, Northern Health and Social Care Trust
Assessment and Rehabilitation Centre (ARC), Western General Hospital, NHS Lothian
Ballymena Health and Care Centre, Northern Health and Social Care Trust
Belsay Day Unit, Newcastle Upon Tyne Hospitals NHS Foundation Trust.
Community Therapy Team, Dorset Healthcare NHS Foundation Trust
Chandler's Ford and Eastleigh Therapy team, Hampshire and IOW Healthcare NHS Foundation Trust
Community Adult Therapy Service, Manx Care, Isle of Man
Community Physiotherapy, Moyle Hospital, Northern Health and Social Care Trust
Community Rehab and Falls Service, Guy's and St Thomas' NHS Foundation Trust
Domiciliary Physiotherapy, Newcastle Upon Tyne Hospitals NHS Foundation Trust
Community Rehabilitation Team: 1:1 Home based Sessions, East Lancashire Hospitals Trust
Community Rehabilitation Team: Strength and Balance Classes, East Lancashire Hospitals Trust
East Renfrewshire Community Rehabilitation Team, NHS Greater Glasgow and Clyde
Frailty Force, Newcastle upon Tyne Hospitals NHS Foundation Trust
Community Rehab Team, Great Western Hospital NHS Foundation trust
Intermediate Care Lambeth, Guy's and St Thomas' NHS Foundation Trust
Integrated Independence Team, Homerton Healthcare NHS Foundation Trust
Sherwood Rehabilitation Team, Sherwood Forest Hospitals NHS Trust
Whitefield Assessment and Rehabilitation Centre, NHS Fife
Community rehabilitation team, Newcastle upon Tyne Hospitals NHS Foundation Trust
Older Peoples Services - Outpatients, New Victoria Hospital, NHS Greater Glasgow and Clyde
Older Person's Assessment Unit, Guy's and St. Thomas' NHS Foundation Trust
Community Rehabilitation Team, Royal Devon University Healthcare NHS Foundation Trust
Mid and North Community Therapy, Hampshire and Isle of Wight Healthcare NHS Foundation Trust
Comprehensive Assessment Service for Older People (CASOP), University Hospitals of Derby and Burton NHS Foundation Trust
Urgent Community Response (UCR), East Lancashire Hospitals NHS Trust
Weymouth and Portland Frailty Service, Weymouth and Portland PCN
Allen Day Unit Therapy, Mersey and West Lancashire Teaching Hospitals

Returning services from Wave 1 are marked in **bold**.

We received complete data sets for 542 patients. Table 2 shows their baseline characteristics.

Table 2. Baseline data for Wave 2 BEPOP patients

Mean age (years)		81.8 (Range 60-104)
Female Sex		316 (58.3%)
Living in own home or relatives home		505 (93.1%)
Clinical Frailty Score (CFS) ≥ 5		333 (64.7%) *
Intended purpose of intervention**	Improve sarcopenia/ frailty	180 (33.2%)
	Falls prevention	385 (71.2%)
	To improve mobility	436 (80.4%)
	Improve physical performance	219 (40.4%)
	Other	77 (14.2%)

*515 participants had CFS recorded

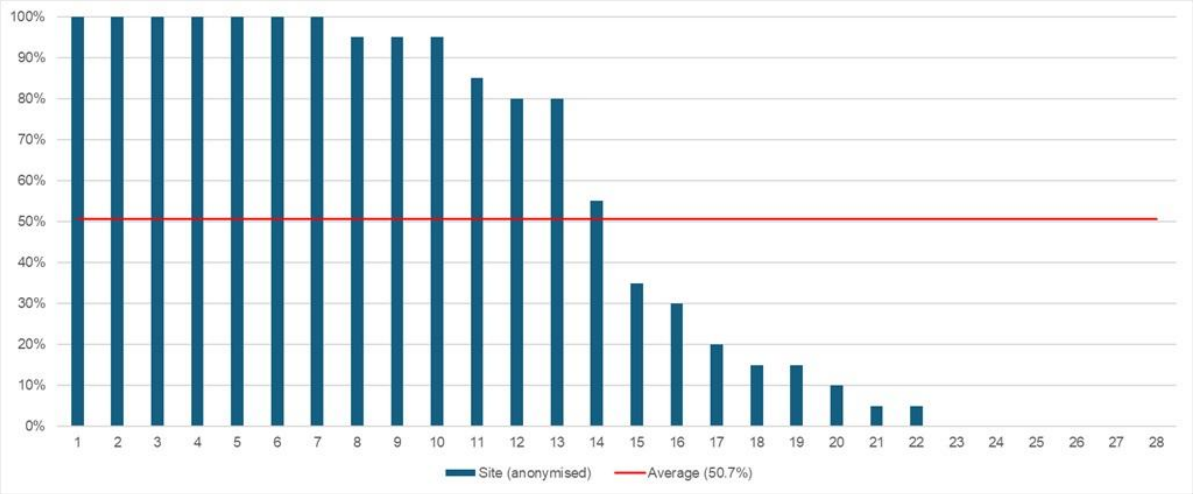
**Note that some patients had multiple intended purposes for their intervention thus percentages add up to more than 100%

Recommendation 1 – Assessment

Recommendation: *All older people referred for exercise programmes should be assessed using an **objective strength-based assessment method**, such as five times sit-to-stand test, before starting an exercise programme*

Performance: **51% of patients received an objective strength-based assessment** at baseline, but we found wide variation across the 28 services as shown in Figure 3

Figure 3. Objective strength-based assessment method at baseline by service



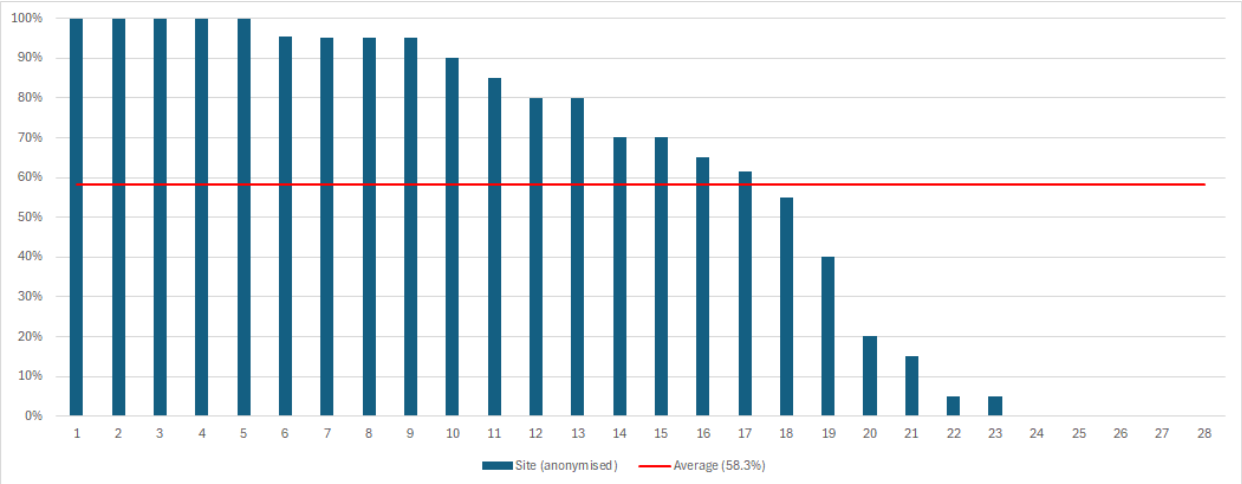
Objective strength-based assessment defined as hand grip strength, 1 repetition maximum, 5x sit to stand or 30 second sit to stand tests

Recommendation 2 –Diagnosis

Recommendation: ***Probable sarcopenia can be diagnosed****, as per EWGSOP [8] guidelines and diagnostic cut-offs, using objective strength-based assessment methods (by measuring grip strength AND five times sit-to stand test). This should be clearly documented and shared with the patient's GP.*

Performance: **58% of patients received a diagnosis** (sarcopenia, probable sarcopenia, or not sarcopenic). There was wide variation across services, ranging from 0-100%. 41% of participants were assessed for a diagnosis either before entry or at the point of entry to the service, which increased during their course of therapy.

Figure 4. Diagnosis of sarcopenia/no sarcopenia received by point of discharge by service

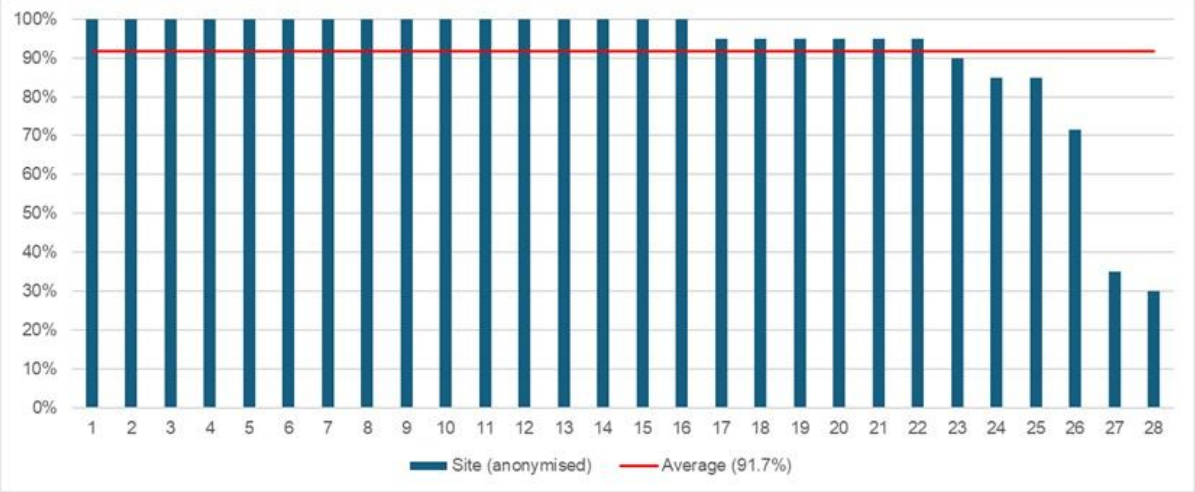


Recommendation 3 – Exercise Prescription

Recommendation: ***Progressive resistance exercise training*** *should be included in exercise prescriptions for older people living with sarcopenia (probable or confirmed) or frailty*

Performance: **92% of patients received resistance training**. At 16 of the 28 sites, all patients received this exercise modality; all sites offered resistance training to at least some patients.

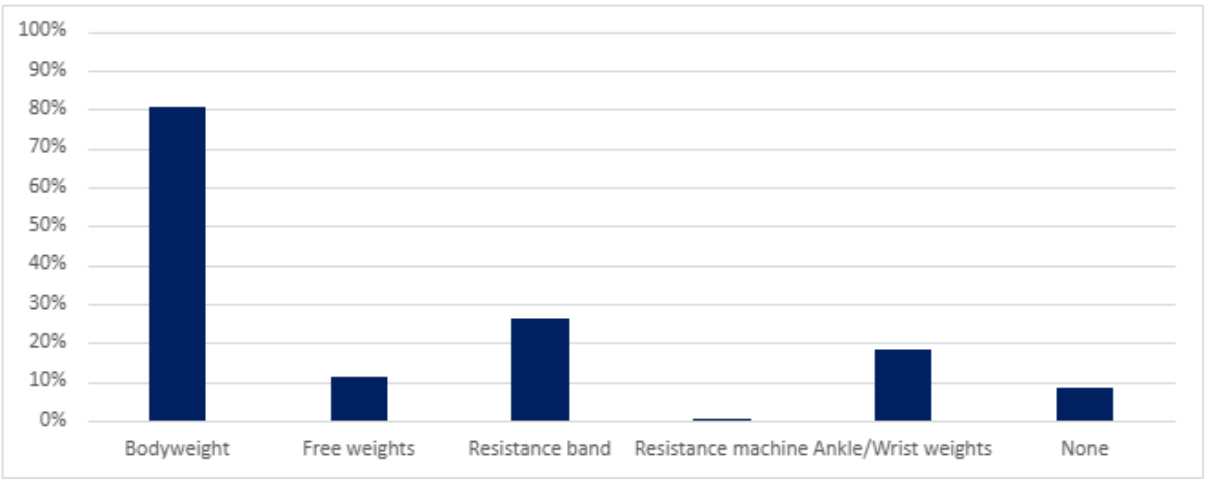
Figure 5: Delivery of resistance-based exercise by service



Resistance exercise included: bodyweight, free weights, resistance bands, resistance machines, ankle/wrist weights or other resistance method where stated

Bodyweight exercises were the most common modality of resistance exercise employed, as shown in Figure 6; a minority of patients also used resistance bands

Figure 6: Type of resistance exercise training offered to patients

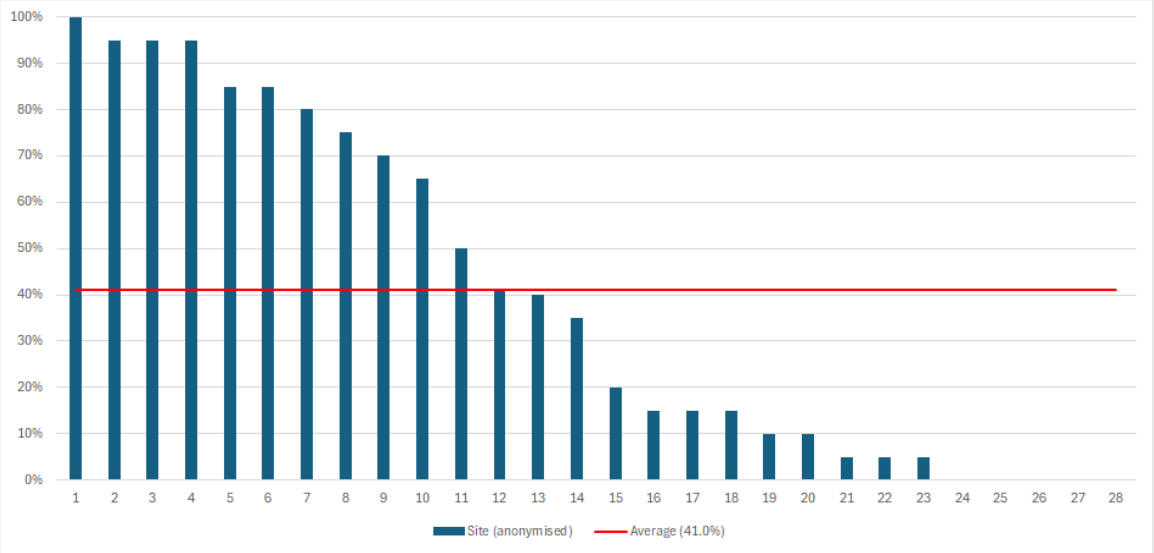


Recommendation 4 – Progress and Re-assess

Recommendation*: Resistance exercises should be* ***progressed by increasing intensity of exercises*** *(e.g. greater weight, stronger therabands), not just by increasing the volume of exercises*

Performance: **41% of patients progressed intensity of exercise** during their course of therapy. Only one service did this for all of their reported patients.

Figure 7. Progression of intensity of exercise by service

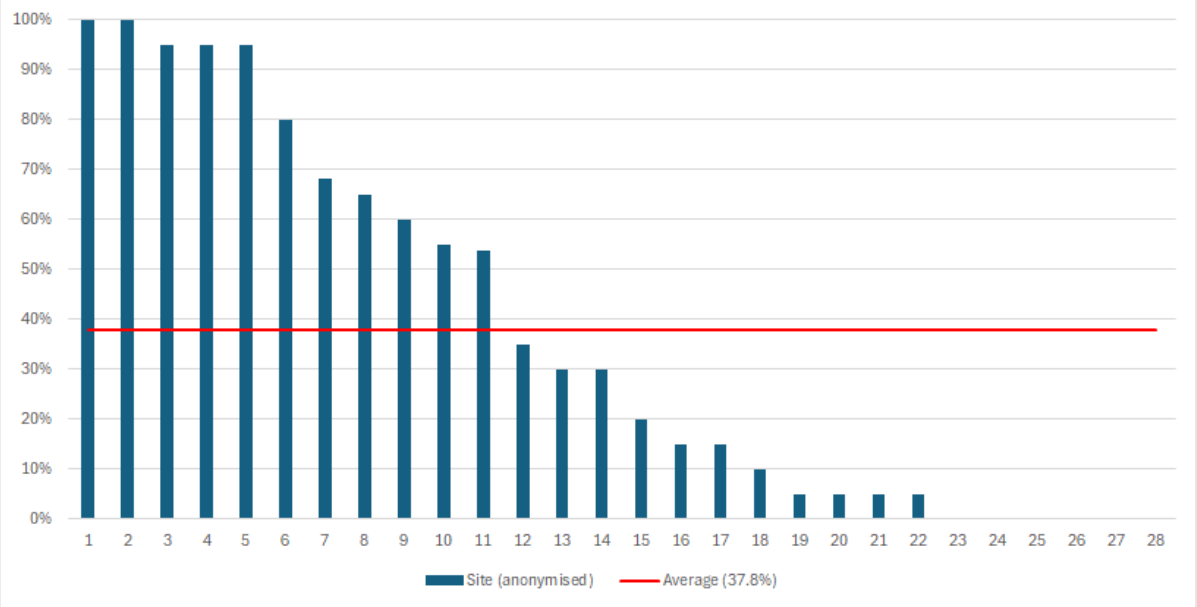


Intensity progression = progression of 1-repetition maximum, increase in weight used or increase in resistance band strength

Recommendation: *At the end of an exercise programme, all older people should* ***be re-assessed using the same objective strength-based assessment method*** *that was used at baseline (paired outcome assessment), to assess progress and guide ongoing prescription*

Performance: **38% of patients had a repeat assessment using the same strength-based measure** as at baseline. Although most patients (60%) did have some form of repeat assessment, these were not always completed using the same method as their initial assessment, making it impossible to inform progression and evaluate effectiveness.

Figure 8. Re-assessment at end of programme using the same strength-based measure as at programme start, by service

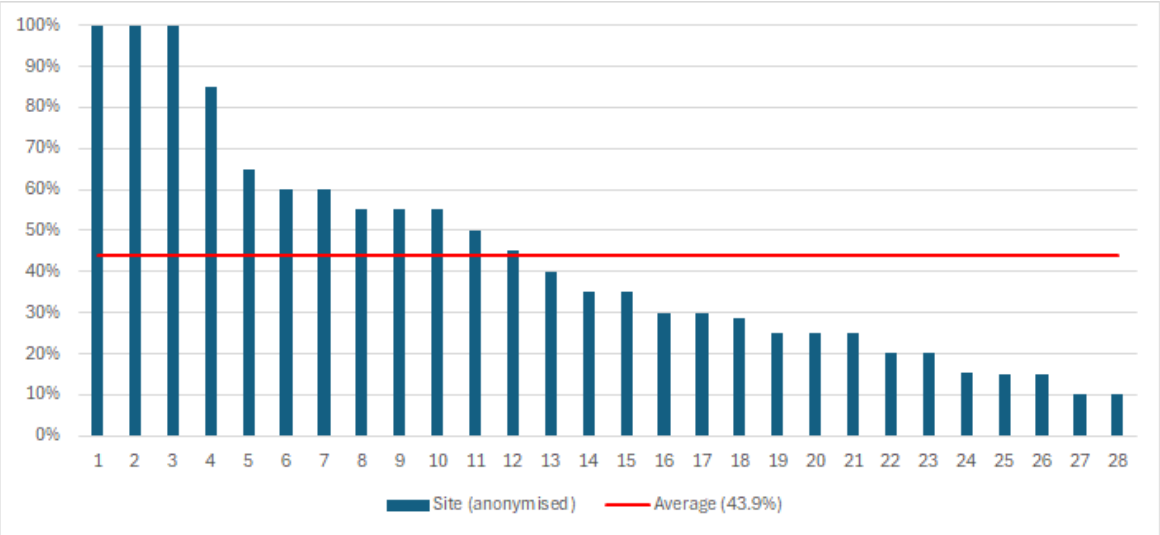


Recommendation 5 – Take Forwards

Recommendation: *All older people completing an exercise programme should be **offered signposting, or referral onwards to ongoing exercise services** where possible.*

Performance: **44% of patients were offered onward referral or signposting** to other services. Sites differed greatly in performance, with some sites signposting or referring all patients, but many sites signposted or referred a minority of patients.

Figure 9. Onward referral or signposting to other exercise services at end of programme, by service



Overall performance and comparison with Wave 1

Table 3 summarises the results relevant to the key recommendations and shows differences between the overall performance at Wave 1 and Wave 2. Direct comparison between Wave 1 and Wave 2 is possible only for seven sites who took part in both Waves, and these are shown as a separate set of analyses.

Table 3. Summary of results for Wave 1 and 2

	All sites		**Sites taking part in both Waves**	
Recommendation	*Wave 1 (n=10)*	*Wave 2 (n=28)*	*Wave 1 (n=7)*	*Wave 2 (n=7)*
1. Assessment	61%	51%	52%	64%
2. Diagnosis:				
- on entering programme	17%	41%	13%	44%
- at discharge from programme	*NA*	58%	*NA*	60%
3. Exercise Prescription	98%	92%	97%	87%
4a. Progress	26%	41%	11%	33%
4b. Re-Assess	32%	38%	34%	54%
5. Take Forwards	41%	44%	31%	40%

NA: Not asked in Wave 1. Green: Improvement (>5%), Red: Worsening (>5%). Yellow: No change (<5% change either way)

Discussion

The ethos of BEPOP is to drive continuous improvements in the quality and effectiveness of exercise interventions for older people living with sarcopenia or frailty by providing individualised feedback to participating services. The greater the number of services taking part, the greater the impact on practice within the NHS is likely to be. We are therefore particularly heartened by the increase in sites contributing data from 10 to 28 for Wave 2. This increase in participating services also helps to grow the community of practice around BEPOP which was established in Wave 1. We plan further dissemination, training and knowledge exchange events for participating services and the wider therapy community as part of this community of practice.

For this Wave 2 report, we focussed our analyses on the five key recommendations generated from Wave 1. By concentrating on these key recommendations, and keeping the analyses simple, we maximise clarity and impact with an emphasis on using the key recommendations to drive change. Additional analyses are possible from the data collected, and we plan to examine these data in more depth as the work of BEPOP progresses.

The overall results of Wave 2 contain some encouraging signals – in particular, increases in sarcopenia diagnosis and progression of intensity. However, results for other recommendations showed little change or even slightly worse results. Some of this may be due to a wider range of sites taking part in Wave 2 rather than the most enthusiastic sites that are likely to have enrolled in Wave 1. Importantly, direct comparison of performance for sites taking part in both Waves suggests additional improvements in the proportion of patients with objective strength-based assessment and re-assessment, and improvements in the percentages of onward referral / signposting. This is an important test of the BEPOP methodology; suggesting that benchmarking and feedback to sites as part of BEPOP can indeed have a real impact on care at participating sites.

Nevertheless, overall performance for most of the recommendations remains significantly suboptimal. For most outcomes, there is great variability in performance between the best and worst performing sites, which suggests opportunities to share and spread best practice within the BEPOP community. This will be a focus of our knowledge exchange activities over the next few months.

Our discussions with practitioners during initial dissemination of Wave 2 findings suggest some potential barriers to improving performance within services. Rather than modifying the five key recommendations from BEPOP Wave 1, we have chosen to add a small number of associated enabling recommendations to complement the main recommendations. These enabling recommendations are practical, concrete actions which, if enacted, have the potential to support further improvement in performance against the main recommendations. These recommendations also provide additional ways for services to engage with service managers and drive improvements in care pathways and clinical outcomes.

Future plans

For Wave 3, we plan to increase the number of participating services still further, to between 40 and 50, with data on approximately 800-1000 patients. In addition, we will streamline the data we collect to focus on the key recommendations only. This should in turn reduce the data collection burden making participation more acceptable to the teams involved. We will also invite slow-stream inpatient rehabilitation wards to participate in Wave 3. Wave 3 will start in late summer 2025 and continue to the end of 2025 as part of the annual BEPOP cycle now established. We are particularly keen to build on our strong community team involvement to align with Government priorities in the ten-year health plan.

Although we did not include a qualitative component of data collection in BEPOP Wave 2 as we did in Wave 1, the overall results highlight the need for further in-depth work to understand drivers and barriers to efficacious exercise delivery in clinical practice. This more in-depth work will inform planned work developing tailored educational materials for therapists delivering resistance exercise training.

Finally, we recognise the need for effective communications to disseminate findings from BEPOP to ensure the engagement of an even broader range of therapy and/or exercise providers. We need to reach other stakeholders, including service commissioners and policymakers. The BEPOP delivery group will continue to leverage the successful three-way partnership between AGILE, the British Geriatrics Society and the NIHR Newcastle Biomedical Research Centre to do this, developing a formal communications strategy and work plan. A communications strategy is vital to ensuring the right messages reach the right audiences to drive further participation in BEPOP and further improvements in the quality of care we provide to older people with sarcopenia or frailty.

Contact us

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