Royal College of Physicians | National Respiratory Audit Programme (NRAP)

NRAP Good Practice Repository – Pulmonary Rehabilitation

PRSAS Accredited

Bedford Pulmonary Rehabilitation Team
Bedford Hospital
Bedfordshire Hospitals NHS Foundation Trust

Outline of improvement project

Background

Early PR improves health, quality of life, and reduces the short-term risk of hospital admission.

People who experience an AECOPD should start a PR course within 30 days of referral. The Royal College of Physicians (RCP) healthcare improvement goals for 2024-2026 aim for 70% of patients with an AECOPD to start a course within 30 days of referral (NRAP 2024). The Bedford Pulmonary Rehabilitation Service did not meet this standard. The median PR waiting time for post-exacerbation patients in the Bedford PR service was 82 days, congruently, only 20% commenced within 30 days of referral, from August 2023 to July 2024.

Aim

The aim was to reduce the wait time for AECOPD patients to 50 days by July 2025 and increase to 50% of patients achieving the start date within 30 days.

Method

Baseline data for August 2023 to July 2024 were obtained from NRAP. Wait times at each stage of the pathway were collected for AECOPD referrals between November 2024 to April 2025 to give greater insight.

Simultaneously, a process map and driver diagram were completed during a team meeting. The referral pathway was clarified with input from all members of the PR team, and updated leaflets devised by the service for referrers and patients were approved by the Trust governance committee and distributed to key stakeholders. The stakeholders were the Respiratory Nursing Team and inpatient therapy staff. Distribution of the leaflets took place during an in-service training session on PR and exacerbations held for each of the teams.

Results

Descriptive statistics were utilised to analyse the data.

We received 25 AECOPD referrals from November 2024 to April 2025, of which 8 commenced a PR course, with a mean waiting time of 51.9 days and a median of 48 days. One person (12.5%) started a course within 30 days. From analysing the data regarding dates and courses offered, 6 of the other 7 that commenced a course were as a result of patient choice. Patients did not accept the next available pre-assessment appointment or course but wanted to specify a date and more local venue of choice. 1 patient wait time to start was delayed due to the service not running for a two week period over Christmas. 7 out of the 8 patients had a wait time between 30 and 71 days from referral to start date. 1 patient waited 160 days due to their personal choice of start date and venue.

Conclusion

While the average time to start PR improved from the 2024 data, the percentage of those starting within 30 days decreased; however, the sample size was small.

The length of time the data was collected was limited due to the NRAP submission time scales; however, the AECOPD process and data collection continue beyond the project timescales and will be reviewed on an ongoing basis using the NRAP audit and run charts.

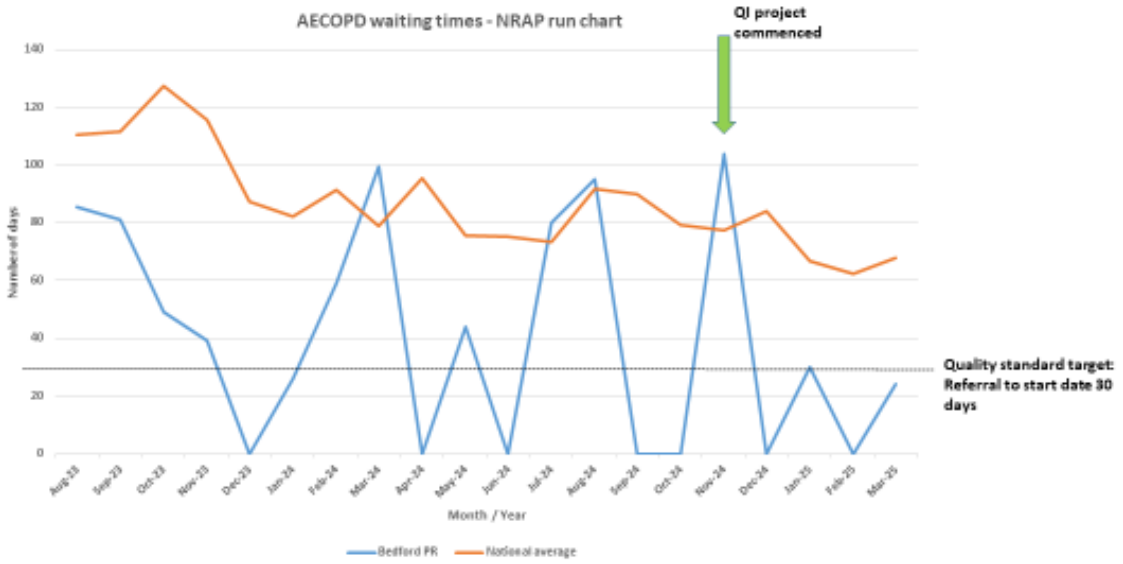
Barriers to starting early PR included patient choice, willingness to consider an alternative venue or wishing to attend on certain days. A significant proportion received home PR input. It was unclear in the notes for 2 referrals the justification for the delay in starting.

Further work will include a project looking at improving uptake of early PR after AECOPD.

There could be further opportunity to look at referral numbers for AECOPD patients, as the numbers declining when offered to be referred is unknown in this project.

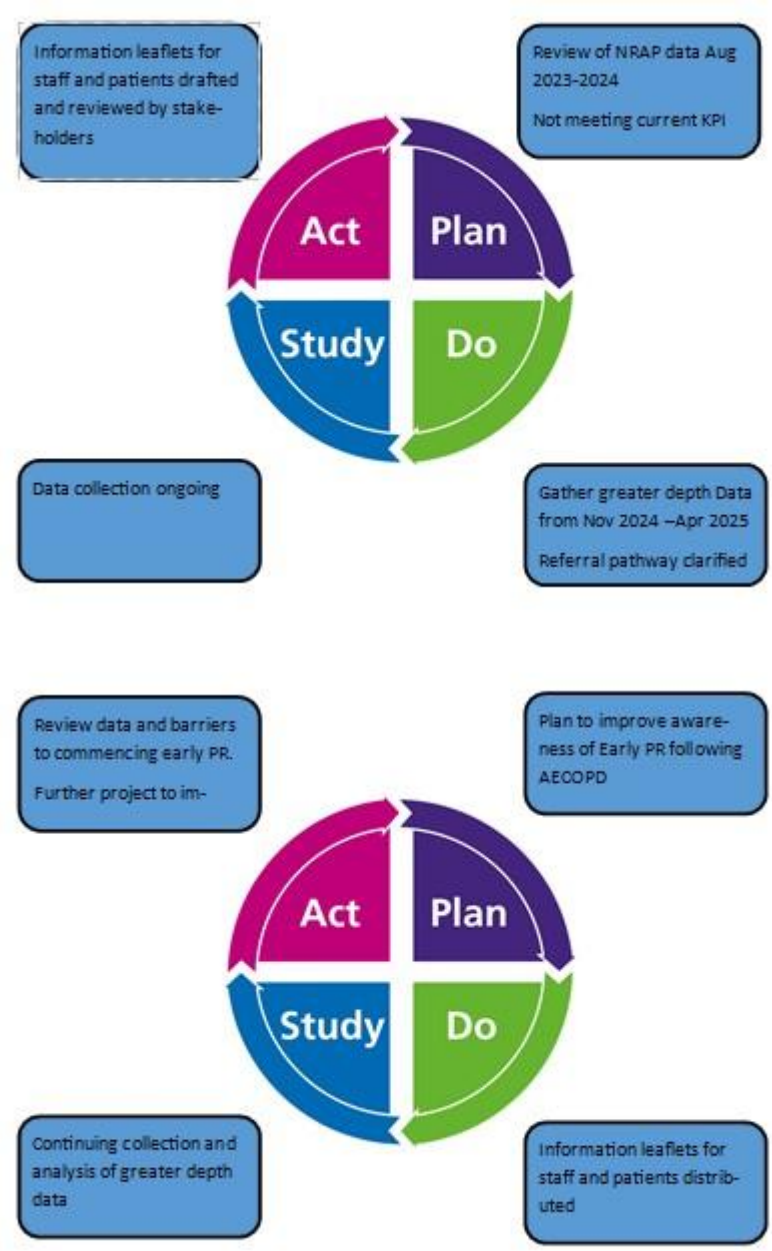
What has been achieved during this improvement project?

- The service has set up a clear pathway for the management of AECOPD patients referred to the service.
- The service has generated educational material for patients and referrers to encourage referral and uptake of PR following an exacerbation.
- The team has increased their knowledge and confidence in completing QI projects.
- The service improved the average number of days waiting time for AECOPD patients from referral to start date from 82 days to 48 days during the data collection period.
- The NRAP run chart below shows AECOPD waiting times from referral to start date, with the improvement project start date indicated by the green arrow.



How did you achieve this improvement?

- The service utilised the Plan, Do Study, Act cycle:



- The team convened to complete a process map and driver diagram (see below). Following this, a clearly defined AECOPD pathway for Bedford PR was developed (see Supporting Resources).

Healthcare Improvement driver diagram:

The blue arrows indicate all the areas of change we implemented for this project.

Aim	Primary Drivers	Secondary Drivers	Change Ideas
AECOPD patients referred to PR to start a course within 30 days of referral	Referrals: -Clear -Appropriate	Admin – put on waiting list correctly to start process	- Criteria for exacerbation (at time of referral) ⟵ - Clear AECOPD process pathway ⟵
		Patient – Knowledge of PR	- Review referral form for Resp Nurses ⟵
		Referrer – knowledge of PR	- Information for referrers, patients and staff as to reason for PR in 30 days ⟵
	PR Clinical staff	Clear documentation throughout to know AECOPD patient	- On all appointment slots AECOPD indicated ⟵ - Textual "save" space on PR group ⟵
		Availability of a PR course & assessment	- Added on "Need to Know" matrix ⟵

- Separate AECOPD educational material was devised for patients and for referrers (see Supporting Resources).
- Engagement with local Breathe Easy group attendees ensured patient feedback for the educational leaflet.
- Engagement and training sessions with the Respiratory Nursing team (at their Team Meeting) and Inpatient Therapist (at an In-service training session) took place to promote PR and the use of the educational material.
- The Respiratory Nurse referral form was updated to allow clearer referral criteria and ease of referral.
- All members of the Bedford PR team were engaged with the project, and it was on the agenda at team meetings, to emphasise the importance of the AECOPD referral pathway and reasons for patients to attend, to try to engage patients to take up the opportunity at initial contact.
- The NRAP audit data was utilised for statistics.
- A database for AECOPD referrals was established to collate and analyse additional information, helping to identify barriers to meeting standards, such as patient choice.

How are you going to ensure your intervention is going to lead to sustainable improvement in future?

- The AECOPD pathway for management of referrals is now embedded in practice.
- The AECOPD pathway is part of the PR Competency framework document (section 6.5) and will be incorporated in the induction of new staff members.
- The educational material will continue to be utilised. It has been distributed to all GP surgeries within the geographical area of the service. The material will continue to form part of the bi-annual correspondence we send out to the local practices.
- The educational material has been added to the Trust website.
- The service presents a regular session as part of the in-service training programme for In-patient staff; therefore, promotion and education of AECOPD PR will continue with new staff changes within the Trust.
- The team will continue to monitor AECOPD wait times as part of the Annual Report, using the NRAP audit. This is shared with the team, and successes will be highlighted in team meetings to maintain enthusiasm.
- AECOPD pathway referrals have been added to the team meeting agenda to provide ongoing reinforcement and highlight the importance of adhering to the pathway.
- There are plans to undertake further work, including a project focused on improving the uptake of early PR following an AECOPD.

Did you face any challenges or difficulties when implementing your project? If so, how did you overcome them?

Time constraints within a small team of staff with different working days/hours meant needing to be organised and plan in advance to come together to work on the project. We utilised team meeting days to ensure there was no impact on the running of the service.

Initially, embedding the new process and ensuring all staff were remembering to adhere to the process to manage AECOPD referrals. Regular reminders during team meetings supported the integration of the process into routine practice.

A challenge with some of the referred AECOPD patients is encouraging them to attend a pre-assessment and course at the earliest opportunity. A significant proportion had home input as they did not feel well enough to attend a community venue. Patient choice was noted as a barrier to achieving the timescales required to meet the standard. This is not an area we have overcome but plan to try to explore further.

What advice would you give to other respiratory services hoping to replicate your service improvement idea?

- The project worked well by having all staff members enthusiastic and knowledgeable about the need and desire to improve in this area.

- Keep having regular brief updates and reminders of the ongoing project to help embed it in practice. Including positive successes as examples.
- Make sure you have a clear pathway that everyone can follow.
- Make sure that referrers have a simple way of ensuring their part of the process is clear. Changes to our referral form ensure that they have to record if they are an AECOPD, which reduces the risk of patients not continuing on the correct PR pathway.
- An area that we hope to spend more time in the future is looking at the reasons for low uptake of early PR after AECOPD (ie, patient choice not to attend) and considering offering future telephone contact with the team to encourage patients to attend beyond the initial referral.

Have you generated any supporting resources you would like to share with others?

An AECOPD pathway for Bedford PR (attached)

Patient education leaflet on the Importance of PR following an exacerbation (attached)

Referrers/staff education leaflet on the Importance of timely referral to PR after hospitalisation for AECOPD (attached)

It is important that services NRAP promotes within the good practice repository are aware of quality standards in their area of practice. Which quality standards are relevant to your QIP, and how did your project fit within the quality standards in general?

(for example, British Thoracic Society and NICE guidance)

The Bedford PR service met the quality standard "Start date for PR within 90 days of referral for patients with stable COPD" in 97.5% of patients in the 2024/25 NRAP audit. However, the new British Thoracic Society Quality Standard statement 2 for Pulmonary Rehabilitation states "Individuals referred for post-hospitalisation pulmonary rehabilitation should be enrolled within 30 days of discharge". This standard was not being achieved by Bedford PR.

Our project fits with the quality measure by having evidence of a local pathway for referring individuals to PR after hospitalisation with AECOPD. Although a pathway was already in place, changes to our referral form aimed to improve the process. The project itself was aiming to improve the number of days from referral to start date. In the data collection period for the project, the Bedford PR service improved its waiting time from 82 days to 48 days. One patient (12.5%) was commenced on a course within 30 days.

The Royal College of Physicians (RCP) healthcare improvement goals for 2024-2026 aim for 70% of patients with an AECOPD to start a course within 30 days of referral. Our service is not achieving this level at present, however this project is continuing.

Supporting Resources

Bedford PR AECOPD pathway:

Acute Exacerbation of COPD (AECOPD) pathway for Pulmonary Rehabilitation (PR)

Referral received stating Exacerbation of COPD (Admin)	Patient contacted for telephone assessment (Referral prioritised by clinical staff from waiting list)	At pre-assessment patient booked on earliest available course (Clinical staff)
• Form or email received * • Registered within 3 working days • Added to waiting list with "priority" symbol (! on S1) • If inpatient; admin staff will monitor date of discharge • Added to *AECOPD database*	• Patient offered earliest pre-assessment appointment available (all venues included) • Patient choice • "AECOPD" added to appointment information ** • If inpatient on referral; date of referral amended to date of discharge from hospital • *AECOPD database* updated	• Patient offered earliest start date (all venues included) • Patient choice • "AECOPD" added to appointment information ** • Noted on Need to Know sheet as AECOPD • *AECOPD database* updated

*Patients referred by inpatient staff may still be inpatients at the time of receipt of referral. These are considered appropriate PR referrals. Referrals are encouraged to be sent by the inpatient staff (Respiratory Nurses / Inpatient therapists) at the time of discussion of PR and when consent from the patient is gained, to ensure a PR referral is completed and not missed due to a ward change or early discharge. An estimated date of discharge (EDD) is completed by the staff on the referral form to assist PR admin staff monitoring the discharge date. All PR staff have access to the Bedford Hospital inpatient systems (IPMs, VIPER and Nerve Centre) as we are based within the same Trust and therefore date of discharge can be checked prior to attempting to contact the patient to complete a telephone contact assessment.

**At all assessments and appointments, made as part of the AECOPD patients journey, it will be clear to all staff that the patient is post exacerbation and therefore extra support, encouragement and monitoring may be required to complete the PR course.

AECOPD Database: This is completed to support data collection for ongoing quality improvement.

Patient information leaflet: The Importance of Pulmonary Rehabilitation following an exacerbation:

Bedfordshire, Luton and Milton Keynes Health and Care Partnership

NHS Bedfordshire Hospitals NHS Foundation Trust

Chronic Obstructive Pulmonary Disease (COPD)

Patient Information: The importance of Pulmonary Rehabilitation (PR) programme following an exacerbation (flare up of condition)

We understand it sounds scary and you may ask yourself, 'why on earth would I exercise when I am short of breath and have a terrible cough, well, there is a huge amount of evidence to support the role for PR for a flare up of chronic obstructive pulmonary disease.

We urge you to undertake a PR programme as soon as possible. Here's why…

PR, which includes physical exercise and education support, is one of the best ways to improve your health. Starting rehabilitation **soon** after a flare up is important, as it reduces the harmful effects of this event on muscle strength.

One of the main problems people with COPD experience is breathlessness. This in turn leads to shying away from any form of exercise. As a result, breathing becomes harder and breathlessness occurs at even lower level activities. Becoming more active reverses this cycle. Exercise helps improve your muscle strength, heart and circulation. This can lower the stress of exercise on your breathing. When you exercise regularly, you will have less breathless, an increased exercise capacity and a better quality of life.

FACTS

- Starting PR soon after discharge from hospital can reduce the three month readmission rate from 33% to **7%.**
- Physical activity can reduce death in patients with COPD by **52%!**
- Uptake and completion of PR following Acute Exacerbation of Chronic Obstructive Pulmonary Disease (AECOPD) is poor (less than 10%).

Please speak to a member of staff on your ward or contact us to self refer

Bedford Pulmonary Rehabilitation Team
Tel: 01234 730331
Email: bhn-tr.bedfordrespiratory@nhs.net

Staff information leaflet: The Importance of timely referral for PR after hospitalisation for AECOPD:

Bedfordshire, Luton and Milton Keynes Health and Care Partnership

NHS Bedfordshire Hospitals NHS Foundation Trust

The importance of timely referral for Pulmonary Rehabilitation after hospitalisation for acute exacerbations of Chronic Obstructive Pulmonary Disease: information for staff

Acute exacerbations of COPD (AECOPD) are associated with worsening symptoms, impaired health-related quality of life (HRQOL), reduced exercise capacity and physical activity, and skeletal muscle dysfunction, particularly of the lower limbs.

A Cochrane review of several studies showed that Pulmonary Rehabilitation (PR) started shortly after hospital admission (typically within 3 weeks of discharge) significantly improved exercise capacity and HRQOL compared with usual care.

Additionally, there is evidence that PR after a hospitalised exacerbation may reduce the risk of re-admission and improve survival.

The British Thoracic Society (BTS) Guideline on Pulmonary Rehabilitation in Adults recommends that '**patients hospitalised for acute exacerbation of COPD should be offered pulmonary rehabilitation at hospital discharge to commence within one month of discharge**'.

Therefore, **please refer your patients with an AECOPD to us at discharge** (via the below email), and explain the **benefits of engaging in early PR** to them, as detailed above.

We would also ask that you always discuss and try to encourage **face-to-face group PR** in the first instance please, as this model is supported by a convincing evidence base and is considered the 'gold standard'.

Thank you for your contribution towards this important healthcare process.

The Pulmonary Rehabilitation Team

References

British Thoracic Society Quality Standards for Pulmonary Rehabilitation in Adults. British Thoracic Society Reports, Vol 6, No 2, 2014

Bolton CE, Singh SJ, Walker PP, et al. British Thoracic Society guideline on pulmonary rehabilitation in adults. Thorax 2013; 68:887–8

Koi FWS, Cheung NK, Rainer TH, et al. Comprehensive care programme for patients with chronic obstructive pulmonary disease: a randomised controlled trial. Thorax 2017; 72:122–8

Lindenauer PK, Stefan MS, Pekow PS, et al. Association between initiation of pulmonary rehabilitation after hospitalization for COPD and 1-year survival among medicare beneficiaries. JAMA 2020; 323:1813–23

Man W, Chaplin E, Daynes E, et al. British Thoracic Society Clinical Statement on pulmonary rehabilitation. Thorax 2023; 78(suppl 5):2–15

Seymour JM, Moore L, Jolley CJ, et al. Outpatient pulmonary rehabilitation following acute exacerbations of COPD. Thorax 2010; 65:423–8

Please refer your patient to the Community Respiratory Therapy team as early as possible via email:
bhn-tr.bedfordrespiratory@nhs.net