Enhanced Community Care

THE EXACERBATOR PHENOTYPE – A CASE FOR INTEGRATION

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BACKGROUND

Pulmonary Rehabilitation (PR) is defined as a comprehensive intervention based on thorough patient assessment followed by patient-tailored therapies that include, but are not limited to, exercise training, education, and self-management intervention aiming at behaviour change, designed to improve the physical and psychological condition of people with chronic respiratory disease and to promote the long-term adherence to health-enhancing behaviours.[1]

Pulmonary Rehabilitation for patients with Chronic Obstructive Pulmonary Disease (COPD) is a key component of the Enhanced Community Care (ECC) Respiratory service and has been provided by the Community Specialist Ambulatory Care team in South Tipperary since May 2022.

From our experience, and a review of South Tipperary PR outcome measures and attendance data to date, it is evident that it is often the COPD patients with the highest symptom burden who do not complete the PR programme, due to intolerable levels of shortness of breath on exertion and recurrent exacerbations.

Patients who failed to complete PR South Tipperary 2022 & 2023
n=48

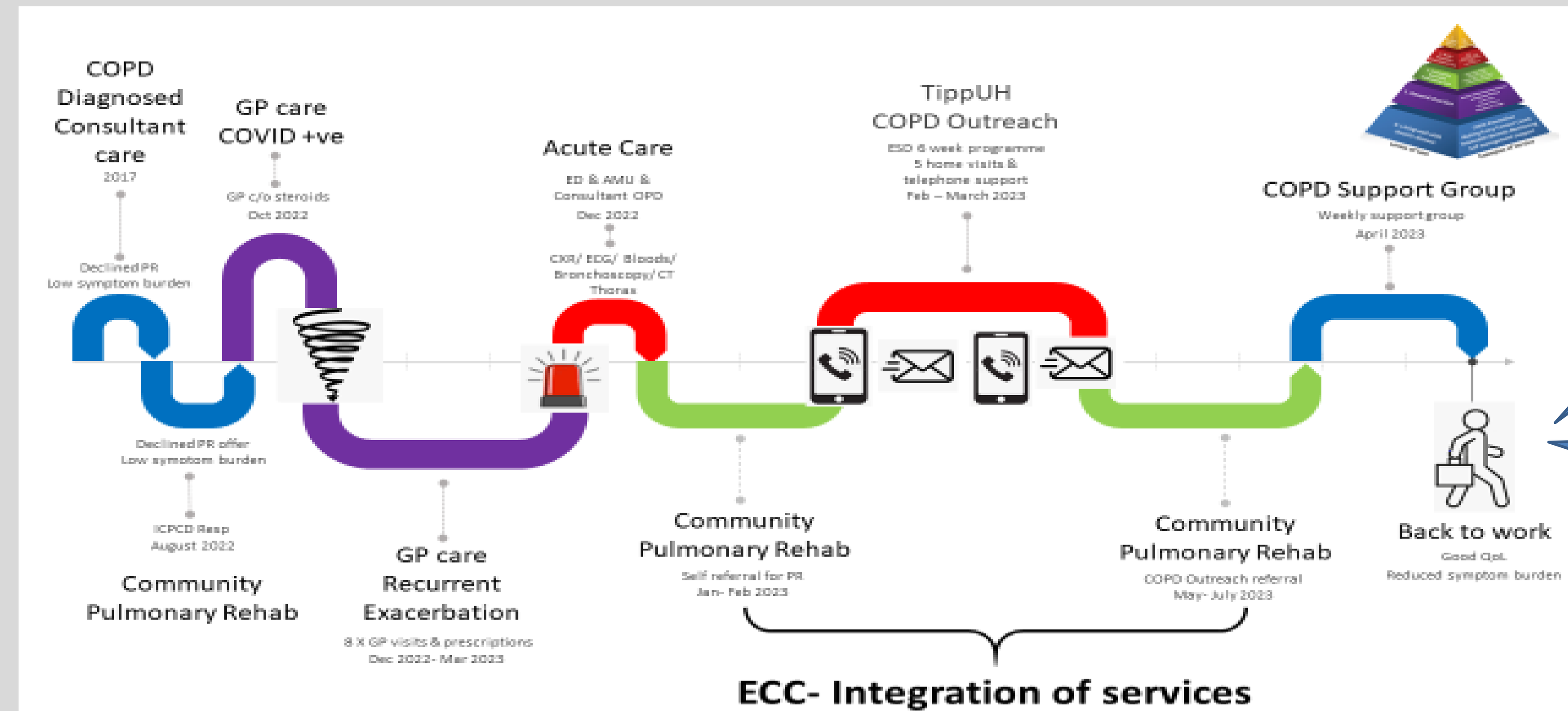
<2 exac in year prior to assessment for PR; >2 exac in year prior to assessment for PR; <10 CAT score; >10 CAT score

Data was analysed using parameters of <2 or ≥2 exacerbations, and CAT <10 or ≥10, as per GOLD Guidelines.

Effective integration of acute and community services is achieved in South Tipperary through flexibility within our work streams and excellent communication skills. This integration ensures patients have timely access to the appropriate care, with seamless transition between levels of care on the ECC Model Pyramid, and therefore best outcomes.

South Tipperary Specialist Ambulatory Care

CASE TIMELINE



"Great to know I have support from the team"

"I thought I'd never feel like myself again"

CASE DESCRIPTION

As per the timeline above:

2017 – October 2022:

- JD, a 66 year old male was diagnosed with COPD in 2017.
- Offered PR 2017 and August 2022: declined due work commitments and low symptom burden.

October 2022 - January 2023:

- Rapid decline in function following Covid-19 infection in October
- Treated by GP with 6 courses of antibiotics and steroids
- Referred to AMAU for review
- Attended ED on one occasion
- GP referred to private Respiratory Consultant (as no GP referral pathway to Community Specialist Respiratory team in place in South Tipperary)

January 2023:

- Patient contacted PR service and commenced PR. High anxiety, high symptom burden and poor pacing ability.
- Failed PR due to 2 acute non-infective exacerbations in 4 weeks, resulting in ED attendance.

February – April 2023:

- Enrolled in COPD Outreach Early Supported Discharge (ESD) programme with excellent response to 1:1 self management support and education
- Close collaboration and communication between acute and community to support patient at this time
- Re-referred to PR
- Signposted to local COPD Support Ireland Support Group

June – August 2023:

- Recommenced PR - 100% attendance with excellent outcomes, resulting in the patient returning to work, with a low symptom burden and no further exacerbations.

Outcome Measures			
	Pre Rehab #1 January 2023	**Post COPD Outreach Pre Rehab #2 May 2023**	**Post Rehab #2 August 2023**
FEV_1	1.02l/ 28%	2.07l/ 57%	N/A
6MWT	340m	430m	470m
mMRC	3	2	1
CAT	15	3	5

DISCUSSION

The 2023 GOLD COPD guidelines incorporate a phenotype-based approach where exacerbation frequency, blood eosinophils, severity of airflow limitation (FEV_1%) and patient's health status (COPD Assessment Test [CAT]) is used to guide therapy.[1] An exacerbator phenotype is defined as any patient with COPD who presents with two or more moderate exacerbations in the previous year, or at least one severe exacerbation that requires hospital admission.[2]

To date literature relating to COPD phenotypes has focused on 'one size fits all' pharmacological management. A multi-level approach to treatment, both pharmacological and non-pharmacological, has the potential to lead to better management of the disease, and better quality of life for patients.

There is robust evidence that early PR post exacerbation could impact on mortality, thus providing a strong rationale for it's early implementation.[3] However, we also know that there is a high drop out rate for patients referred to PR post discharge.[4]

As illustrated in this case review, optimisation of the post-exacerbation COPD patient by the ESD team, prior to attending PR, had a significantly positive impact on adherence to PR and outcomes. It is evident that a more personalised approach or "patient tailored therapy" is required for frequent exacerbators.

CONCLUSION

It is evident from this case review and the evidence base that often COPD patients with the highest symptom burden, due to recurrent exacerbations, do not complete the Pulmonary Rehabilitation programme.

We believe that 1:1 pre-PR case management and provision of a tailored optimisation programme for the exacerbator phenotype within the PR waiting list, would reduce the number of participants failing to complete the PR programme and thus improve overall outcomes. Further research and consideration needs to be given as to how to identify patients in this group, the necessary components of the service, and how it should be provided.

The COPD Outreach and Community Specialist Ambulatory Care teams in South Tipperary will continue to collaborate to develop a reproducible effective treatment programme, to ensure the best possible outcomes for our post-exacerbation COPD patients.

REFERENCES

1. Global Initiative for Chronic Obstructive Lung Disease. Global strategy for the diagnosis, management and prevention of chronic obstructive pulmonary disease: 2023 report. goldcopd.org/2023-gold-report-2/
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3. M. Puhan et al. Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease Cochrane Database Syst Rev (1) (2009), p. CD005305
4. S.E. Jones *et al.* Pulmonary rehabilitation following hospitalisation for acute exacerbation of COPD: referrals, uptake and adherence Thorax, 69 (2) (2014), pp. 181-182