

BOC’s Remote Pulmonary Rehabilitation Offer in Response to the COVID-19 Pandemic – An All Service Evaluation

Michael Kensington (Clinical Specialist Respiratory Physiotherapist/Team Lead) and **Siobhan Hollier** (Clinical Specialist Respiratory Physiotherapist/Senior Team Lead), BOC Healthcare

Aim

The aim of this evaluation was related to due diligence. BOC wanted to explore the validity and effectiveness of it’s remote telephone PR programme’s performance and patient outcomes.

Background

Pulmonary Rehabilitation (PR) was forced to stop functioning as usual due to the COVID-19 pandemic. BTS recommended developing ways to work remotely to provide ongoing care and treatment (BTS, 2020). BOC has 11 PR services nationally and quickly developed an innovative remote telephone programme offer to support their respiratory patients. The service evaluation reviews the outcomes of BOC’s offering to better understand the validity and effectiveness of this remote programme and its place in future service provision.

Methodology

The programme was remote telephone based including initial assessment (IA), outcome measures, class 1 with individualised exercise prescription, 6 weeks of twice weekly individual calls for exercise progression and self-management education, and a discharge session.

All patients with a remote IA between 1 April and 30 September 2020 were included in the evaluation.

Safety Precautions

Safety precautions followed included normal practices of referral triage, clinical assessment at IA, utilising patient home monitoring equipment where available (oximeters/BP monitors), accessing Primary/Community Care records for recent observations, completing clinical frailty scoring, and falls risk assessments. In the case of any patient or clinician doubt regarding safety, the patient was not included in the remote programme and added to the awaiting face to face list. Patients were provided with written exercise safety precaution information as part of routine programme paperwork. This was also discussed as part of the class 1 telephone session with patients confirming they had read and understood the precautions.

Outcome Measures

The outcomes measures used were: 1 minute sit to stand (STS) test, CAT scores, PHQ9, and GAD7. A secondary measure was monitoring of any patient safety incidents reported through BOC’s internal reporting process.

The CAT, PHQ9, and GAD7 are all used as part of routine Gold Standard face to face PR. The decision was made to use the 1 minute STS in lieu of the 6MWT as it has been shown as a valid and reliable exercise outcome test in this patient population (Bohannon & Crouch 2019, Crook et al. 2017). The STS test was performed remotely after the patient had been deemed safe and suitable to proceed with the programme. Where possible the patient’s own oximeter was used for monitoring HR and SpO₂%. The BORG dyspnoea scale was used to quantify patient’s level of breathlessness during the STS test.

Results

There were no reported safety concerns throughout the evaluation period.

Patient Information Table

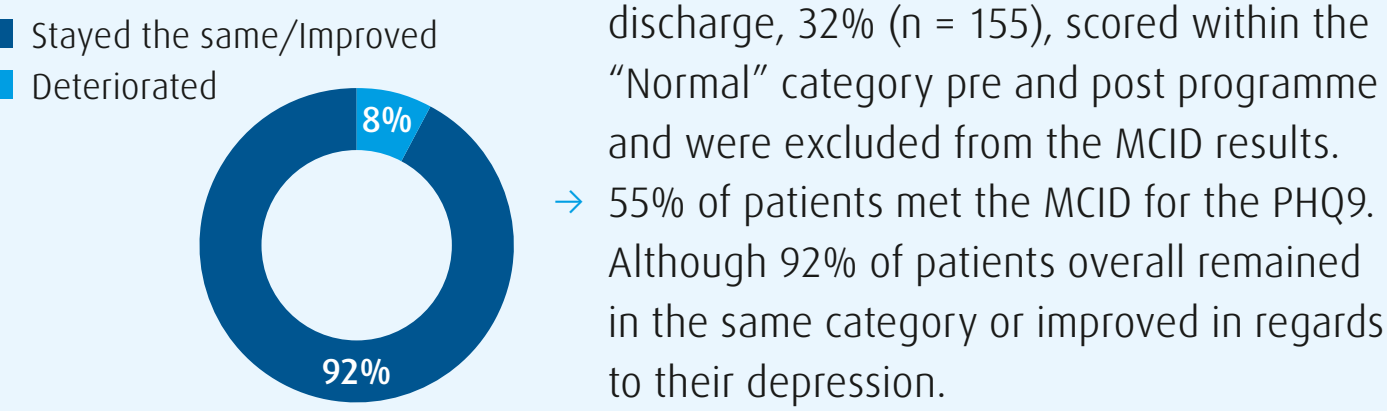
Overall completion rate of those enrolled was 78%

Total Patients n = 1074	
Non-Enrolled n = 455 (42%)	Enrolled n = 619 (58%)
Declined PR – Discharged n = 96 (21%)	Completed With D/c session n = 434 (70%)
Declined Remote PR n = 200 (44%)	Completed >3/4, No D/c session n = 46 (8%)
Inappropriate for Remote n = 133 (29%)	Drop out – No benefit/not for them n = 10 (2%)
Unable to Contact n = 26 (5%)	Drop out – No reason given n = 81 (13%)
	Stopped due to medical reason n = 37 (6%)
	No Data n = 11 (2%)

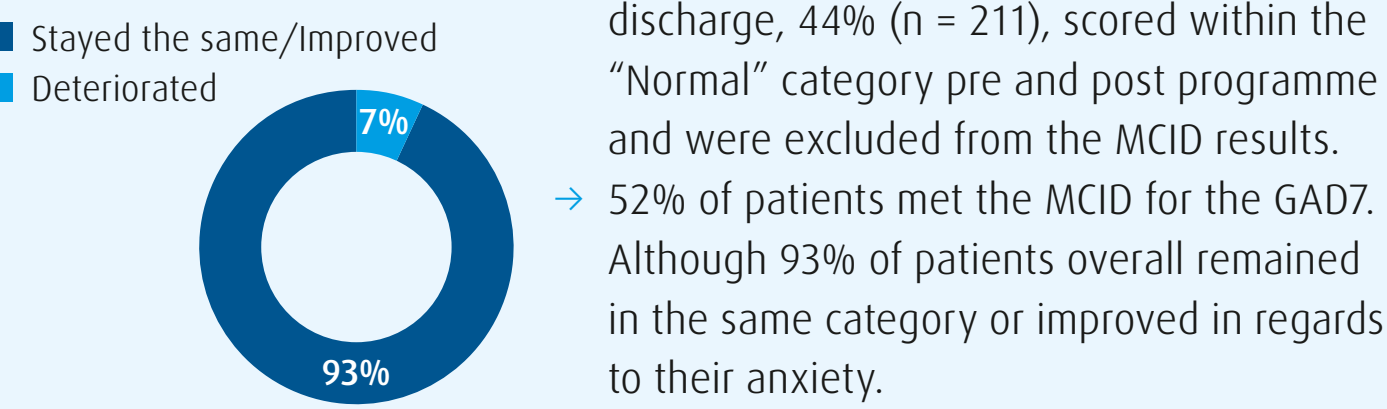
- 60% of patients completing the STS test at discharge assessment achieved a clinically significant improvement with an average improvement for all patients of 4 repetitions.
- The average improvement for the CAT was -4 with 65% of those completing this test at discharge achieving a clinically significant improvement.

Outcome Measure	Average Difference	MCID For Test	% Met MCID	Total Number
STS Test	4	3	60%	381
CAT	-4	-2	65%	426
PHQ9	-2	Reduction in category	55%	274
GAD7	-2	Reduction in category	52%	216

PHQ9 % Change



GAD7 % Change



Discussion and Limitations

The completion rate for the BOC remote telephone PR was favourable compared to the results from the NACAP (2020) PR audit of 78% vs 69% respectively. The service also equalled the national QI priority (NACAP, 2020) of 70% of patients having a discharge assessment on completion.

Outcome measure results indicate that the programme does lead to clinically significant gains for patients in the key areas of exercise tolerance and health status (including anxiety and depression).

Not all patients completing the programme attended a discharge assessment and for those who did undertake a discharge assessment, not every patient had a complete set of programme outcomes, this was primarily due to patient health reasons/ circumstance or data entry omission by the clinical team. Comparison of pre- and post- outcome results was only undertaken where both had been completed.

Findings from this evaluation suggest as an offer, the remote telephone programme could be a safe and valid supplement to gold standard face to face PR as part of a menu-based approach in the future, thus increasing capacity and patient accessibility.

Conclusion

This evaluation demonstrated BOC’s remote telephone PR programme achieved clinical meaningful improvements for patients with no adverse safety concerns. The remote offer has been shown as a viable adjunct to traditional PR, which could be used in any further pandemics or for those unable to access gold standard PR care.

References

Bohannon RW, Crouch R. (2019) 1-Minute Sit-to-Stand Test: Systematic Review of Procedures, Performance, and Clinimetric Properties. Journal of cardiopulmonary rehabilitation and prevention 2019;39(1):2-8

BTS (2020) BTS Guidance: Delivering rehabilitation to patients surviving COVID-19 using an adapted pulmonary rehabilitation approach. 30 July 2020. V1.0.

Crook S, Büsching G, Schultz K, et al. (2017) A multicentre validation of the 1-min sit-to-stand test inpatients with COPD. European Respiratory Journal 2017;49(3):1601871.

NACAP (2020)

Abbreviations

6MWT = Six Minute Walk Test
BOC = British Oxygen Company
BTS = British Thoracic Society
BP = Blood Pressure
CAT = Chronic Obstructive Pulmonary Disease Assessment Tool
GAD7 = Generalised Anxiety Disorder 7
HR = Heart Rate

IA = Initial Assessment
MCID = Minimal Clinically Important Difference
NACAP = National Asthma & COPD Audit Programme
PHQ9 = Patient Health Questionnaire 9
PR = Pulmonary Rehabilitation
STS = Sit to Stand
SpO₂% = Percentage of peripheral oxygen saturation
QI = Quality Improvement