



PARCS PROJECT - ANALYSIS OF
GREATER GLASGOW AND CLYDE
PULMONARY REHABILITATION
REFERRALS
FINAL REPORT

August 2014

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1 INTRODUCTION AND METHOD

One of the key issues identified by the PARCS project is the lack of consistent data about referrals to and participation in exercise maintenance in Scotland. This is an obstacle to understanding more about uptake and adherence, and thus to:

- ★ identifying gaps in provision and obstacles to participation
- ★ designing targeted approaches to improving uptake/adherence
- ★ developing robust business cases for future provision

Through the PARCS scoping exercise, it was identified that NHS Greater Glasgow and Clyde held data on referrals from Pulmonary Rehabilitation (PR) into exercise maintenance across the health board region. NHS Greater Glasgow and Clyde agreed to provide our team with access to the anonymised data, to enable an analysis of referral patterns. This would provide additional data for the wider PARCS project and also inform our assumptions in assessing the economic case for exercise maintenance.

1.1 Method

NHS Greater Glasgow and Clyde holds paper records of all individuals participating in PR. We conducted a quantitative analysis of the anonymised PR records of 578 patients who had successfully completed pulmonary rehabilitation in 2012. These records were reviewed to:

- ★ extract key data from anonymised records of patients referred to exercise maintenance
- ★ produce a spreadsheet of this data, based on a format agreed with PARCS team and PR team
- ★ collate key demographic and condition data for those referred to exercise maintenance, including:
 - the referral pathway to PR
 - how long it took between patients being referred to PR and receiving their first assessment
 - where PR classes were held
 - age of patients completing PR
 - how long it takes patients to complete PR once they started
 - number and proportion of patients referred to Vitality (exercise maintenance programme for people with a variety of long term conditions) or Live Active (health behaviour change GP referral scheme) for support with exercise maintenance
 - where Vitality classes were held
 - reasons patients were not referred to exercise maintenance

Not all of this data is presented in this report, but was provided to the PARCS project and NHS Greater Glasgow and Clyde for their ongoing use. For the purposes of this report, we have presented key findings about numbers and demographics of patients being referred to exercise maintenance, reasons for non-referral and the relationship between deprivation and uptake.

1.2 Acknowledgements

Our sincere thanks to the staff from NHS Greater Glasgow and Clyde, based at Gartnavel General Hospital, who provided access to the pulmonary rehabilitation records and support during the data extraction process. This report would not have been possible without this access and support.

2 FINDINGS

2.1 Referral to exercise maintenance

58.1% (338) of patients were referred to exercise maintenance following successful completion of their PR programme (see Table 1). Of those who were referred to exercise maintenance classes, 97.6% (330) were referred to Vitality and just 2.4% (8) were referred to Live Active. Patients referred to Live Active included those who were more active and able; this offered them a wider option of exercise choice.

Table 1 – Referral to exercise maintenance and gender split

	Number	Proportion
Patients completing pulmonary rehabilitation	578	-
Patients referred to exercise maintenance	338	58.5%
Patients not referred to exercise maintenance	239	41.3%
Patients whose referral status is unknown	1	0.2%
Patients referred to Vitality	330	97.6%
Patients referred to Live Active	8	2.4%
Males completing pulmonary rehabilitation	309	53.5%
Males referred to exercise maintenance	175	48.2%
Female completing pulmonary rehabilitation	309	53.5%
Females referred to exercise maintenance	163	51.5%

Of all the patients successfully completing pulmonary rehabilitation in 2012, 53.5% were female and 46.5% were male. For those who were referred to exercise maintenance classes after completing their rehab, 51.8% were female and 48.2% were male. This suggests that there are broadly similar levels of males and females both completing pulmonary rehabilitation and being referred to exercise maintenance.

2.1.1 Age profile

The average age of patients completing PR was 69 years old. Whilst ages ranged from 33 to 89, the majority were aged between 60 and 69 (34.7%, 200) and 70 and 79 (37.7%, 217).

The age profile of those who were referred on to exercise maintenance was broadly similar, with a slightly higher proportion of those aged 60-69 being referred (41.2%, 139), and a slightly lower proportion of older individuals aged 70+ being referred.

2.2 Reasons for non-referral to exercise maintenance

41.3% of patients were not referred to exercise maintenance. The reason for not referring the patient was not always provided, however the most common reason cited was because the patient

did not want to attend. In many instances they indicated that they would continue a home-based exercise regime instead, though this was not always documented.

In addition, in many cases, the health care professional did not refer a patient to exercise maintenance because of the patient's poor condition. This ranged from patients who were affected by debilitating chest infections, to those who were waiting for surgery, and in some instances the illness related to co-morbidities rather than pulmonary conditions.

In some instances patients stopped coming to PR classes and health care professionals faced difficulties in contacting patients, meaning that there was no opportunity to refer patients to exercise maintenance.

The primary reasons that patients were not referred to exercise maintenance are outlined in Table 2 below.

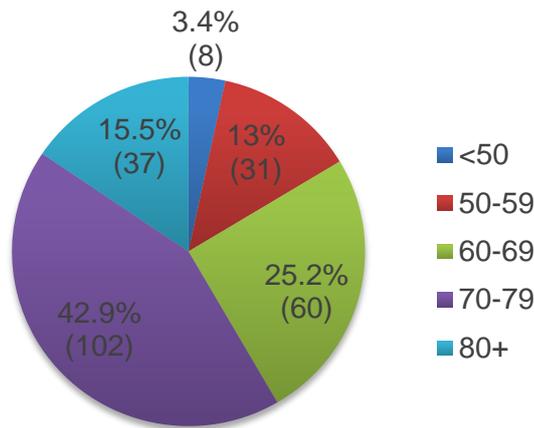
Table 2 – Reasons for not referring patients to exercise maintenance classes (n=239)

Reason for non-referral	Frequency	Proportion of those not-referred
Patient declined to attend exercise maintenance	86	36%
Poor health/worsening condition	52	21.8%
Unable to contact patient	24	10%
Patient already doing exercises at home/in the community	12	5%
Physical activity levels beyond vitality classes	10	4.2%
Work commitments	5	2.1%
Patient doesn't feel a benefit from PR exercises	4	1.7%
No classes available in the patient's area	3	1.3%
Infrequent attendance at Pulmonary Rehab	3	1.3%
Travel/Transport	2	0.8%
Patient has since relocated	2	0.8%
Family commitments	2	0.8%
Referred to exercise maintenance programme through GP practice	2	0.8%
No reason provided	32	13.4%

2.3 Age and referral

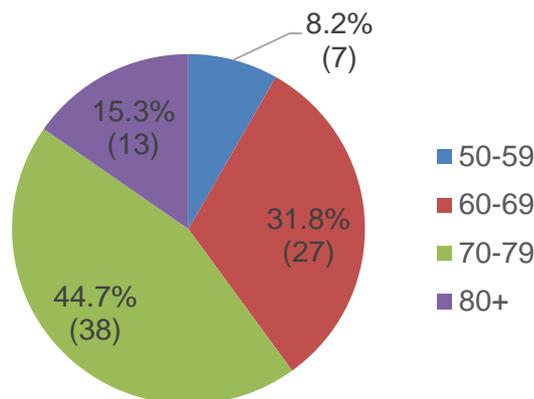
The age breakdown of patients who were not referred to exercise maintenance classes is illustrated in the figure below:

Figure 1 – Age range of participants not referred to exercise maintenance



As shown in Table 2, 36% of those were not referred to exercise maintenance had declined referral. Figure 2 gives the age range of those patients who chose not to be referred:

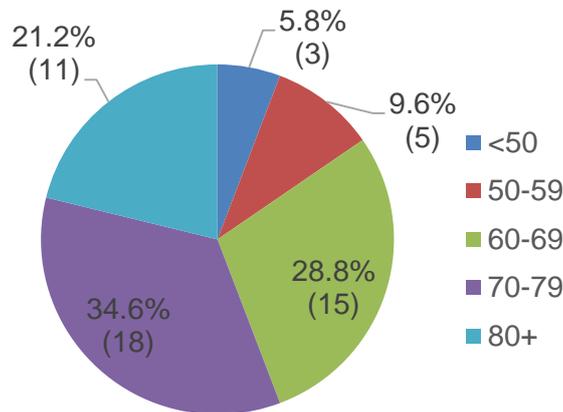
Figure 2 – Age range of patients declining to attend exercise maintenance (n=85)



None of the patients who declined referrals to exercise maintenance were aged under 50. The figure below demonstrates the profile of those declining exercise maintenance was similar to the profile of those referred, although a smaller proportion of individuals aged 50-59 declined. This may suggest that younger individuals are less likely to decline classes.

Poor health/worsening condition was another common reason for non-referral and Figure 3 demonstrates the breakdown of this across the age ranges:

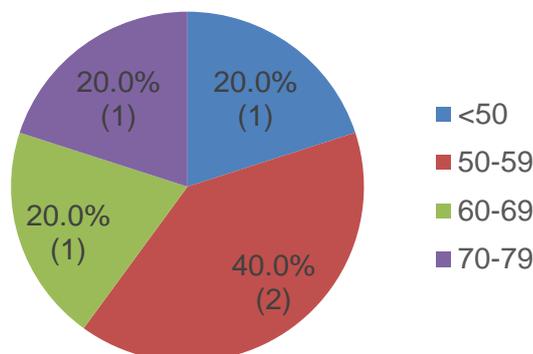
Figure 3 – Age range of patients not referred to exercise maintenance due to poor health/worsening condition (n=52)



As might be expected, the proportion of patients aged 80+ who cited poor health/worsening condition (21.2%, 11) was disproportionately higher than in other age groups. In contrast, few patients under 60 cited poor health as a reason for not attending exercise maintenance.

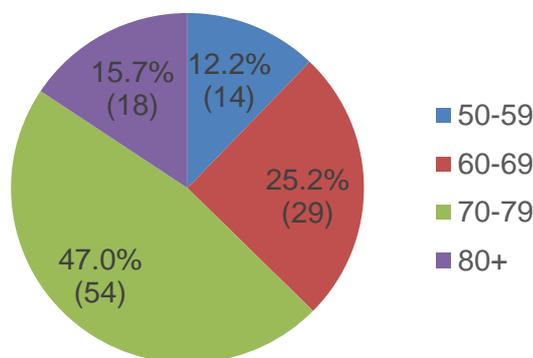
All patients who said they couldn't attend exercise maintenance due to family commitments were aged 80+. Interestingly, those who said they couldn't attend due to work commitments came from a range of ages, including one patient who was in their 70s, as demonstrated in Figure 4 below:

Figure 4 – Age range of patients not referred due to work commitments (n=5)



In some instances, health care professionals recorded whether patients were planning to, or were already, conducting home-based exercises for exercise maintenance (see Figure 5). This was not recorded uniformly across all patient records, but in the records of 48.1% (115) of patients who were not referred to exercise maintenance, health care professionals noted that they either intended to exercise at home, or were already doing so.

Figure 5 – Proportion of patients not taking up exercise maintenance who continued home-based exercise by age range (n=115)



There were no instances where health care professionals had recorded that individuals aged less than 50 were continuing home-based exercises.

2.4 Deprivation

Patients' postcodes were analysed to identify which data zone each patient lived within. The data zone is the key small-area statistical geography in Scotland. By identifying the appropriate data zone for each patient completing PR it is possible to determine how deprived an area they live in, as defined by the Scottish Index of Multiple Deprivation (SIMD). This data was used to calculate the number and proportion of patients who were from the most deprived areas (15% most deprived data zones) and compared with the data from patients who were not from the most deprived areas (ie those who lived within the remaining 85% of data zones). This is presented in Table 3 below:

Table 3 – Deprivation – based on patients' home addresses

	Number	Proportion
Patients from most deprived areas completing PR	203	35.1%
Patients from other parts of the region completing PR	375	64.9%
Patients from most deprived areas who were referred to exercise maintenance	116	57.1%
Patients from other parts of the region who were referred to exercise maintenance	222	59.2%
Patients from most deprived areas who declined exercise maintenance	33	16.3%
Patients from other parts of the region who declined	53	14.1%

exercise maintenance

35.1% (203) of those who successfully completed pulmonary rehabilitation came from the participants living in areas amongst the most deprived in Scotland. There was very little difference in the proportions of patients from deprived areas (57.1%, 116) and those from all other areas (59.2%, 222) who were referred to exercise maintenance. The proportion (16.3%, 33) of those from the most deprived areas who declined exercise maintenance was only slightly greater, compared to those from all other areas (14.1%, 53). Importantly, the data indicates that deprivation does not impact on referral to exercise maintenance or the rate at which patients decline referrals. However the lower proportion of people from deprived areas who then go on to complete maintenance programmes warrants further investigation. This potentially reflects the availability of locally-based exercise maintenance provision within these areas.

3 KEY MESSAGES

The most striking message emerging from this data analysis is the proportionately similar levels of patients from deprived areas that accept and decline a referral to exercise maintenance, compared with the rest of the population.

Based on our own previous research experience and the well-documented public health challenges experienced in the region, we would have expected to see lower uptake rates amongst patients from the most deprived areas.

We conclude that deprivation does not appear to be a barrier to taking up exercise maintenance in this region, and that this may be as a result of NHS Greater Glasgow and Clyde's and Glasgow Life's commitment to locating pulmonary rehabilitation and exercise maintenance services in a range of neighbourhoods including the most deprived: if it's on the doorstep, people are more likely to use service.

The findings from the analysis Greater Glasgow and Clyde's pulmonary rehabilitation referral data also reinforce a specific finding and conclusion, from the PARCS qualitative evaluation. This identified the importance of having 'safety nets' in place – something to ensure that there is a process of follow up in place, which can identify and re-engage people who have fallen out of the standard pathway or disengaged after the initial referral. The analysis of pulmonary rehabilitation data has demonstrated that a significant proportion of people are not referred because the circumstances are not right for them at that time (eg other commitments, poor health). If a safety net were in place, these people would be given the opportunity to re-engage at a later date, when their circumstances enabled them to do so.