



# PULMONARY REHABILITATION

**CROYDON RESPIRATORY TEAM**

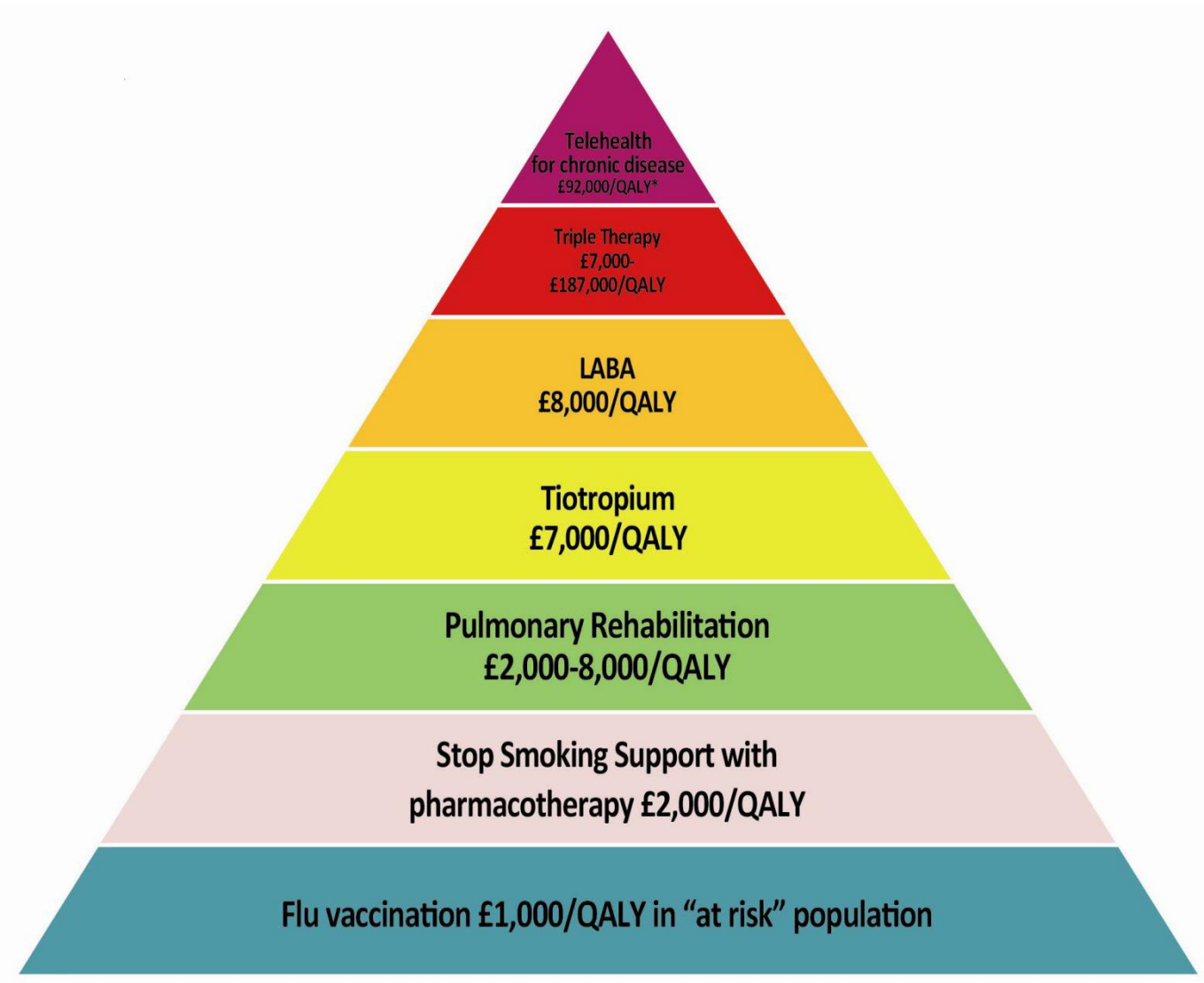
# What is PR?

“ Pulmonary Rehabilitation is a comprehensive intervention designed to improve the physical and psychological condition of people with chronic respiratory disease and promote long-term adherence to health-enhancing” Spruit 2014





# A VALUABLE INTERVENTION.....



Telehealth  
for chronic disease  
£92,000/QALY\*

Triple Therapy  
£7,000-  
£187,000/QALY

LABA  
£8,000/QALY

Tiotropium  
£7,000/QALY

Pulmonary Rehabilitation  
£2,000-8,000/QALY

Stop Smoking Support with  
pharmacotherapy £2,000/QALY

Flu vaccination £1,000/QALY in "at risk" population

Why do patients need  
PR?.....

# PATIENT PROBLEMS

Exertional  
dyspnoea

Frequent  
exacerbation

Fatigue

Reduced  
activity

Anxiety

Low  
mood

Panic

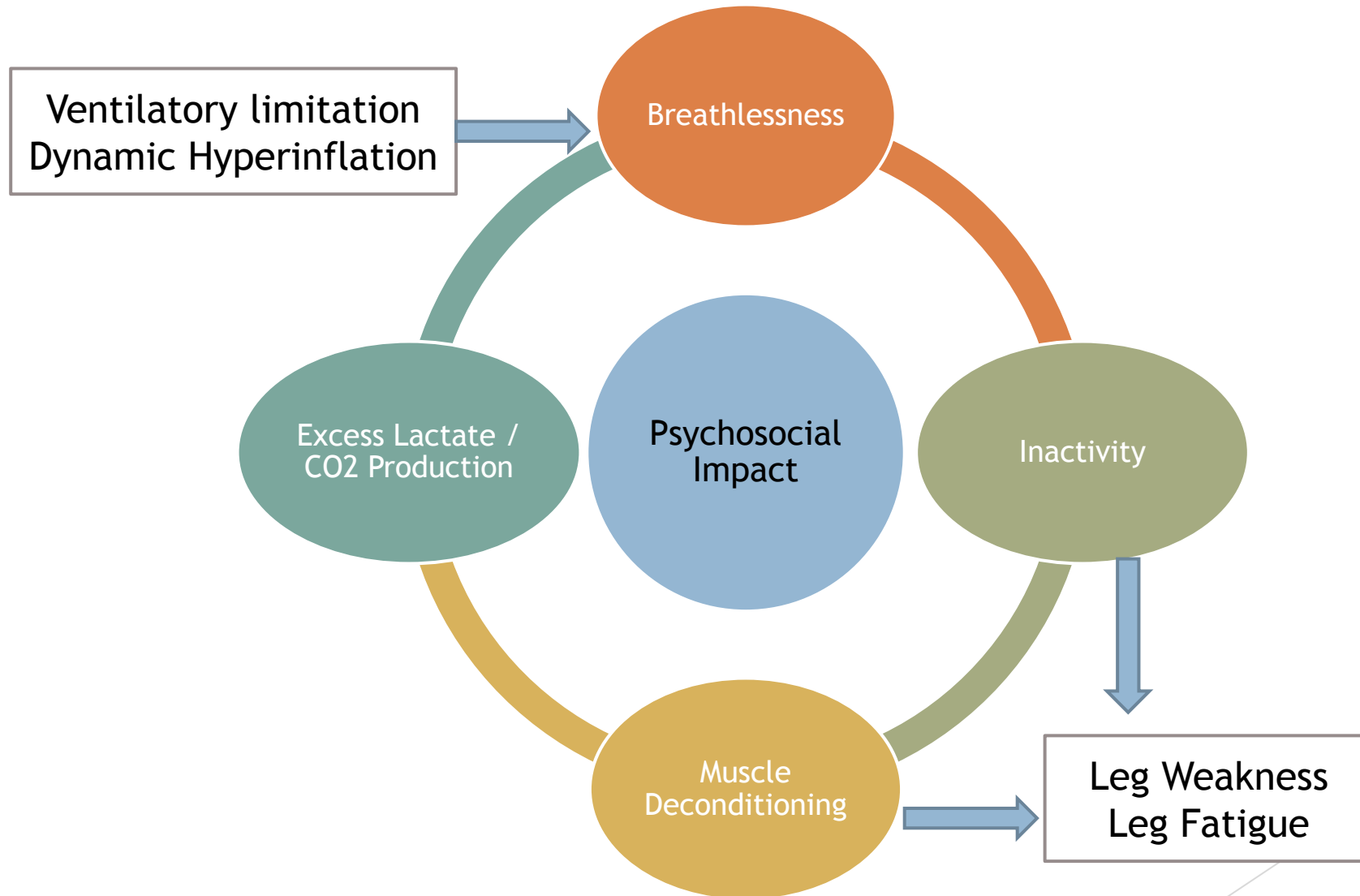
Social  
Inhibition

Reduced  
Confidence

Reduced  
Quality of  
life

Poor  
coping  
strategies

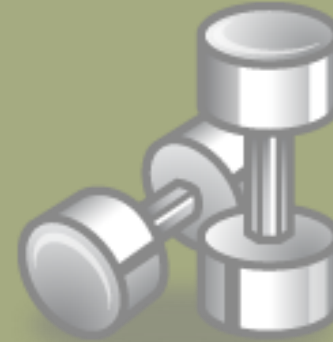
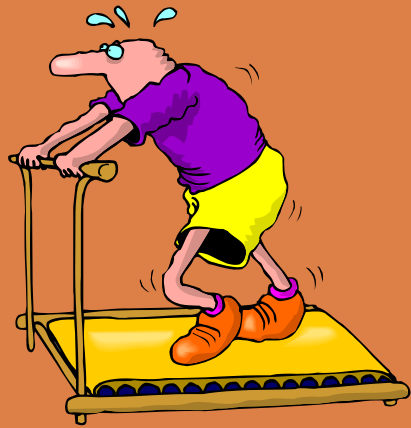
# Cycle of Inactivity



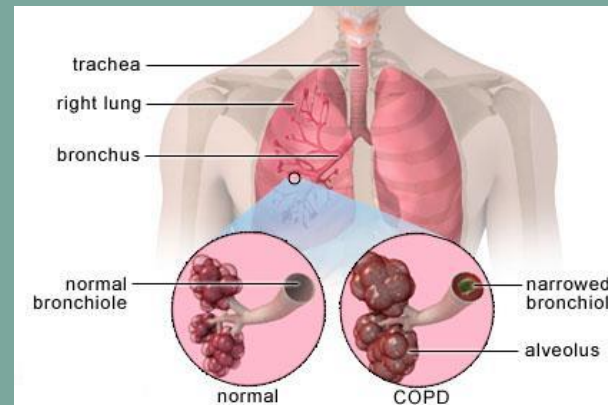


What's Involved??

The background features a series of overlapping, semi-transparent geometric shapes, primarily triangles, in shades of light blue, medium blue, and orange. These shapes are arranged in a way that creates a sense of depth and movement, particularly on the right side of the frame. The overall aesthetic is clean and modern.



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SELF MANAGEMENT EDUCATION

# Aerobic Training

Individuals must exercise to the maximum intensity tolerated to achieve physiological gains in aerobic fitness

- ▶ High Intensity
- ▶ Borg 4 / 5 (Somewhat severe / severe breathlessness)
- ▶ Individual / Prescribed
- ▶ Progression : increased time / speed / resistance
- ▶ Eg walking lengths, step ups, treadmill, bike, arm cycle, star jacks etc .....

# Resistance Training

- ▶ High Intensity
- ▶ Upper limb and Lower limb functional muscles
- ▶ Emphasis on quads
- ▶ Guided by individual muscle fatigue (somewhat severe / severe)
- ▶ Progressed with weight increase, reps 3 x10 max, slow and precise movement

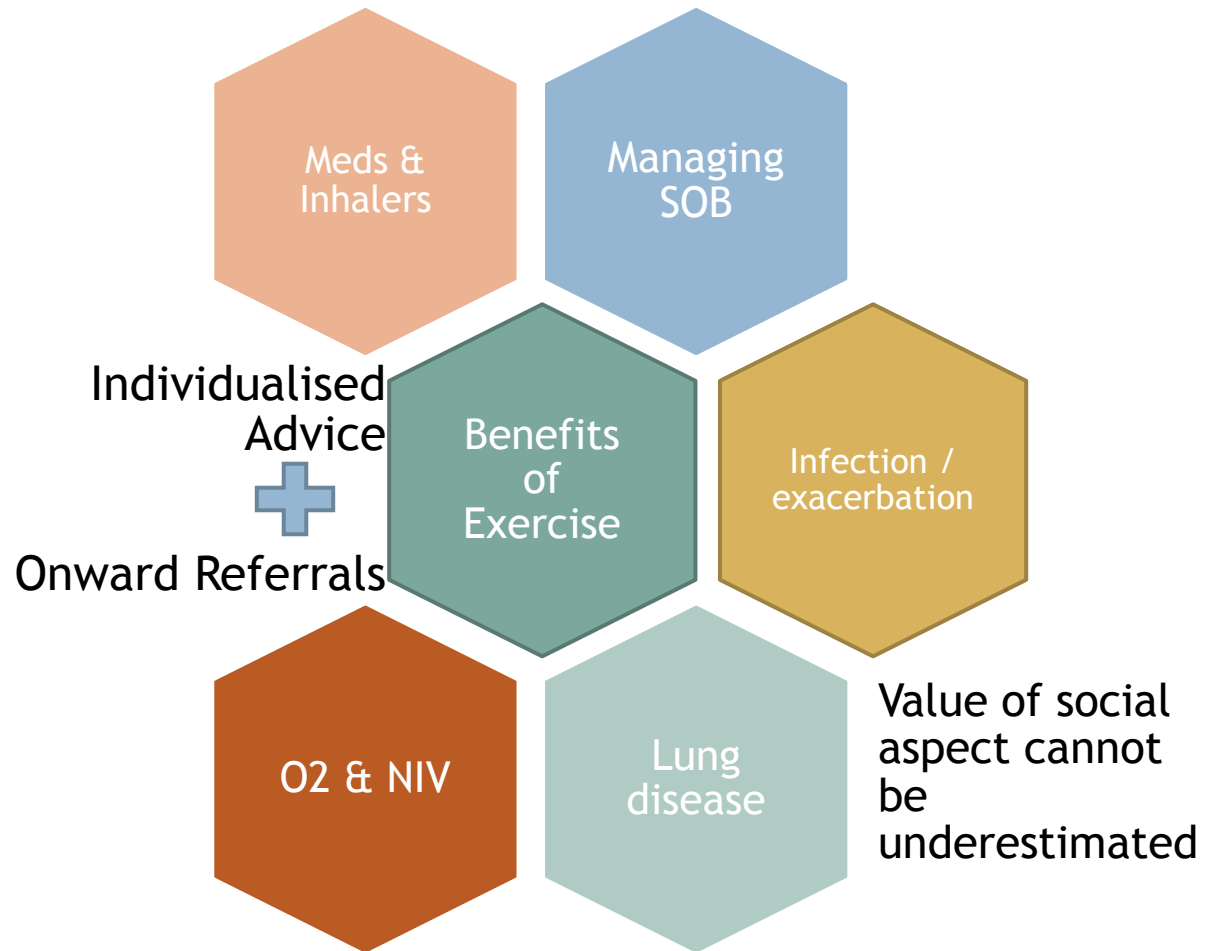
Home Exercise Diary and Onward Exercise plan

# Response to training

Same in CLD as in healthy individuals

- ▶ For a given level of exercise.....
  - ↓ HR ↓ Ventilatory requirement ↓ SOB
- ▶ Overall increased endurance capacity.....
  - ▶ ↑ Muscle fibre capillarisation and oxidative capacity
  - ▶ ↑ Mitochondrial density
- ▶ Desensitisation to breathlessness & increased confidence
- ▶ Changed attitude to activity & SOB

# Self Management Education



A Patients Story.....

The background features abstract geometric shapes, primarily triangles, in shades of blue and orange. These shapes overlap and intersect, creating a dynamic and layered visual effect. The colors are muted and professional, typical of a corporate or healthcare presentation.

PR OUTCOMES.....



# Significant Improvements in....

- ★ EXERCISE TOLERANCE
- ★ BREATHLESSNESS
- ★ HEALTH RELATED QUALITY OF LIFE

Addresses patient related problems and reduces  
NHS burden / healthcare use

# Patients have said.....

It's given me my life back

I can climb stairs now!

When an exercise programme was suggested to me I said you must be joking! I cant even talk, let alone walk!  
Now I'm off to Scotland 😊

I don't feel so frightened when I get short of breath

I feel better in myself

# PROOF!

Outcome measure		Pre rehab		Post rehab		Improvement		MCID	
ISWT		480m		800m		320m		+50m	
MRC		4		1		-3		-1	
PHQ2 / GAD2		4	4	0	0	-4	-4	<2	<2
CAT		38		19		-19		-1.6	
HAD	Anxiety	14		3		-11		<8	
	Depression	8		2		-6		<8	
CRDQ	Dyspnoea	7	1.4	29	5.8	+4.4		+0.5	
	Emotion	12	1.7	37	5.3	+3.6		+0.5	
	Fatigue	6	1.5	25	6.3	+4.8		+0.5	
	Mastery	9	2.25	24	6	+3.8		+0.5	
	Total	34		115					

Outcome measure		Pre rehab		Post rehab		Improvement	MCID
ISWT		60m		370m		310m	+50m
MRC		4		3		-1	-1
HAD	Anxiety	10		5		-5	<8
	Depression	9		2		-7	<8
CRDQ	Dyspnoea	13	2.6	27	5.4	+2.8	+0.5
	Emotion	22	3.1	41	5.9	+2.8	+0.5
	Fatigue	6	1.5	17	4.25	+2.75	+0.5
	Mastery	14	3.5	25	6.25	+2.75	+0.5
	Total	55		110			

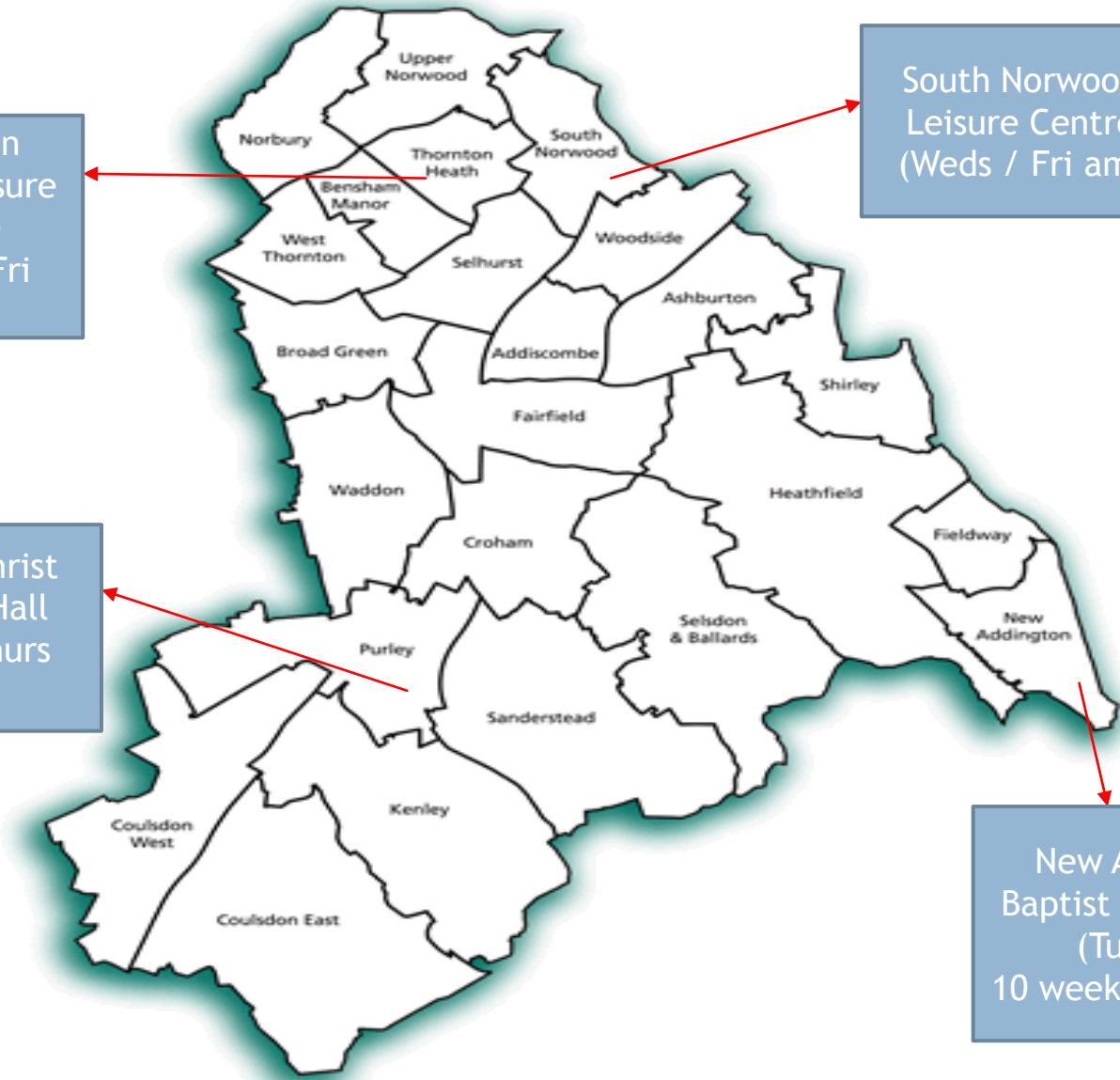
Outcome measure		Pre rehab		Post rehab		Improvement	MCID
ISWT		730m		1020m		290	+50m
MRC		2		1		-1	-1
HAD	Anxiety	9		5		-4	<8
	Depression	6		2		-4	<8
CRDQ	Dyspnoea	21	4.2	21	4.2	0	+0.5
	Emotion	45	6.4	46	6.6	0.2	+0.5
	Fatigue	25	6.25	25	6.25	0	+0.5
	Mastery	25	6.25	28	7	0.75	+0.5
	Total	116		120			

# PR in Croydon

6 week programme, x 2 weekly

Where.....

Thornton  
Heath Leisure  
Centre  
(Weds/ Fri  
pm)



South Norwood  
Leisure Centre  
(Weds / Fri am)

Purley Christ  
Church Hall  
(Tues/Thurs  
pm)

New Addington  
Baptist Church Hall  
(Tues am)  
10 weeks x 1 weekly

## Who Benefits?

Any patient with a diagnosed chronic lung disease who is limited by their breathlessness

- Patients aware of disability / reduced function
- MRC 3-5 (NICE, 2018) However.....

★ **EARLY IN DISEASE PROCESS IS BEST** ★



# REFERRALS

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# Patient selection

## Inclusion Criteria

- ▶ Independently mobile
- ▶ Motivated and able to commit
- ▶ Able to get there
- ▶ Physically able to get breathless on exertion

Please contact us to discuss patients



## Exclusion Criteria

- ▶ *Unstable / uncontrolled* CVS conditions eg AF, Angina, hypertension, arrhythmias, Acute LVF
- ▶ Recent MI
- ▶ Significant aortic stenosis / aortic aneurysm
- ▶ Cognitive impairment to exercise
- ▶ Uncontrolled musculoskeletal pain significantly impacting ability to function / exercise

The tricky bit.....



# Recruiting patients

AIM : to create a positive expectation of treatment to optimise patients attendance during rehabilitation

- ▶ Please discuss referral with patient
- ▶ Make it individually relevant e.g. SOB on stairs
- ▶ Build up from whatever they able to do now
- ▶ Avoid focus on words ‘exercise’ , ‘gym’
- ▶ “sessions to help manage your condition and breathlessness”

NB PR is not ‘breathing exercises’

# Conclusions

- ▶ Its vital for patients with CLD
- ▶ Highly evidence based and proven effective
- ▶ Patients enjoy it!!
- ▶ Refer early

PR is the first step in helping patients change their lifestyle & become more active for good!!

Referrals: CRT generic referral form (+brief summary / spiro)  
Email: [ch-tr.crt@nhs.net](mailto:ch-tr.crt@nhs.net)  
Direct Tel : 02082746495

**ANY QUESTIONS??**