S.E. London Respiratory Network

Respiratory Update for Primary Care

Southwark PLT 19th October 2023

TIME	TOPIC
1.00pm	Welcome & Introduction
1.05pm	Targeted Lung Health Checks – An overview
1.25pm	Accurate Diagnosis of Respiratory Disease
1.55pm	Pulmonary Rehabilitation-why, who and how to refer
2.20pm	South East London Asthma guideline support
3.00pm	Close

S.E. London Respiratory Network

Respiratory Update for Primary Care

Southwark PLT 19th October 2023

Sian Howell
GP SE London,
Clinical Lead for Clinical Effectiveness SE London
Clinical and Care Professional Lead for Population Health Management & Equalities, SE London

Maria Koulopoulou
Specialist Respiratory Physiotherapist
Pulmonary Rehabilitation Clinical Lead,
King's College Hospital

Nancy Kuchemann
GP and Co-Chair Partnership Southwark
Joint Chair Clinical and Care Professional Leaders Group

Helen Magnusen Baker
Senior Pharmaceutical Advisor, Quality and Governance
Medicines Optimisation Team, SEL ICB – Southwark Borough.

Alexandra Nanzer-Kelly
Consultant Respiratory Physician | Guy's Severe Asthma Centre
Guy's & St Thomas' NHS Foundation Trust
Honorary & Adjunct Senior Lecturer | School of Immunology & Microbial Sciences, King's College London

Alicia Piwko
***Highly Specialist Pharmacist**, COPD and Integrated Respiratory Care*
Guy's and St Thomas' NHS Foundation Trust
***PCN Pharmacist**, Quay Health Solutions, North Southwark*

Kimuli Ryanna
Consultant Respiratory Physician
Guy's and St Thomas' NHS Foundation Trust
Clinical Director for SEL Targeted Lung Health Checks (TLHC)

Azhar Saleem
GP Partner; South Lambeth Road Practice & The Deerbrook Surgery
SEL ICB CCP Leadership Team (Respiratory & Estates)
LambethTogether CCP Leadership Team (LTC)
Clinical Lead RightBreathe.com

Katy Simpson
Lead Nurse DMC Practices, Southwark
Clinical Lead- Southwark – Clinical Effectiveness South East London
NMP in Asthma & COPD

Background

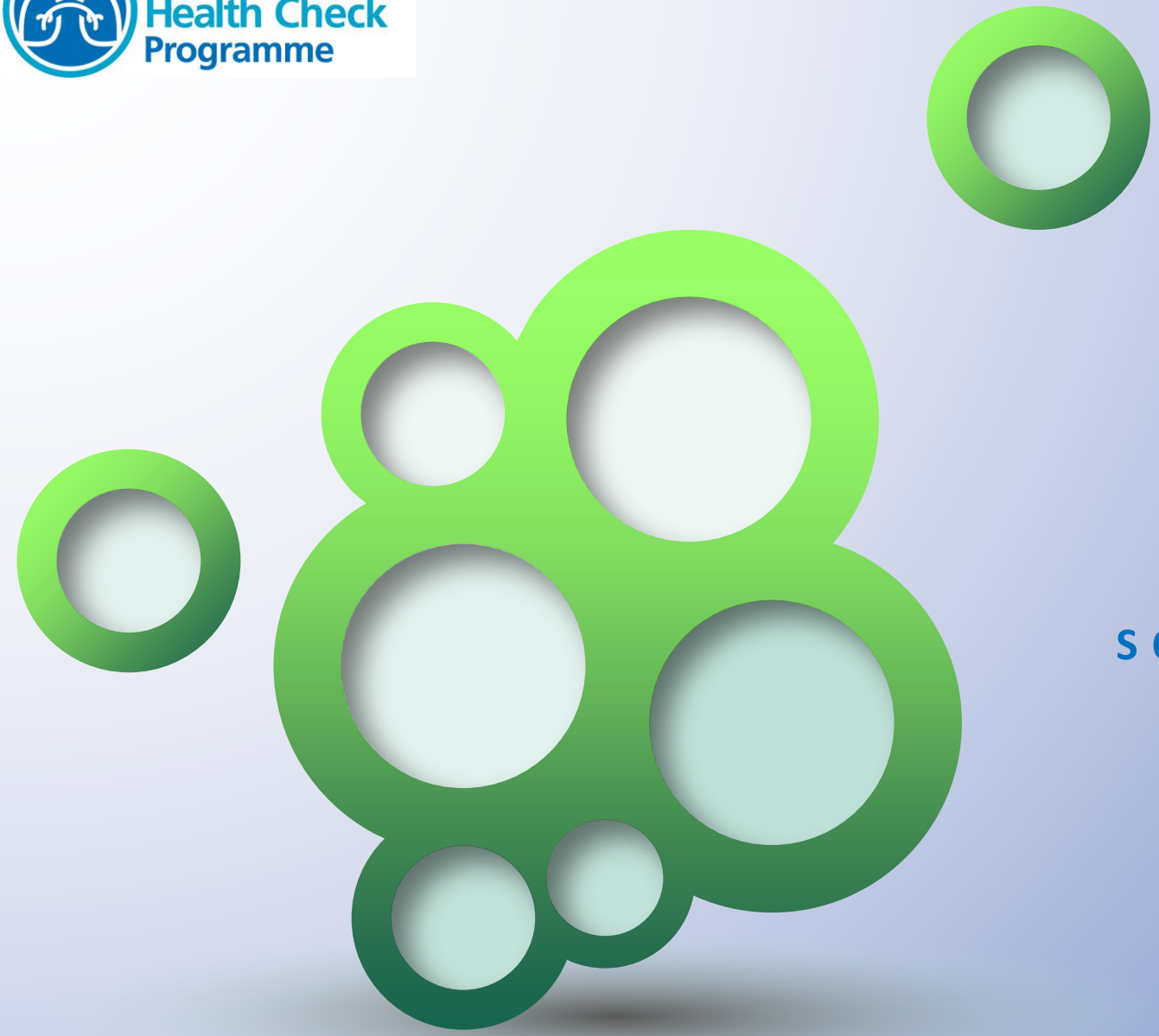
- Late diagnosis of respiratory disease is associated with increased rates of exacerbation and emergency admissions
- Southwark rate of <75 preventable respiratory mortality is 2nd highest in SEL
- Emergency admissions for COPD in Southwark are highest in SEL and 1.5x the rate for England
- Accurate and early diagnosis is needed to ensure timely and appropriate intervention whilst reducing unnecessary and inappropriate intervention
- Pulmonary rehabilitation remains among the most effective treatments for COPD however only 50% of suitable patients in Southwark are referred
- Prescribing practice in the UK is behind that of the rest of Europe leading to poorer outcomes for both our patients and the environment
- Almost 25% of patients in SEL receive 6+ SABA inhalers

Learning points for this event

- What to do with patients who have had a TLHC
- Who and how to refer for quality assured spirometry locally
- Why it is important this is done through a hub model not at practice level
- How to interpret and act on the results you get back, and who can help
- Who and how to refer to Pulmonary Rehab and what you can let your patients know to expect
- Medicines optimisation for COPD and Asthma including the environmental impact of inhalers
- Updated SEL Asthma Guidelines

Targeted Lung Health Check Programme

NHS South East London Cancer Alliance



SOUTH EAST LONDON TARGETED LUNG HEALTH CHECKS

NHS Guy's and St Thomas' NHS Foundation Trust

NHS King's College Hospital NHS Foundation Trust

NHS Lewisham and Greenwich NHS Trust

NHS South East London Clinical Commissioning Group

NATIONAL TARGETED LUNG HEALTH CHECKS (TLHC) PROGRAMME

South East London Cancer Alliance

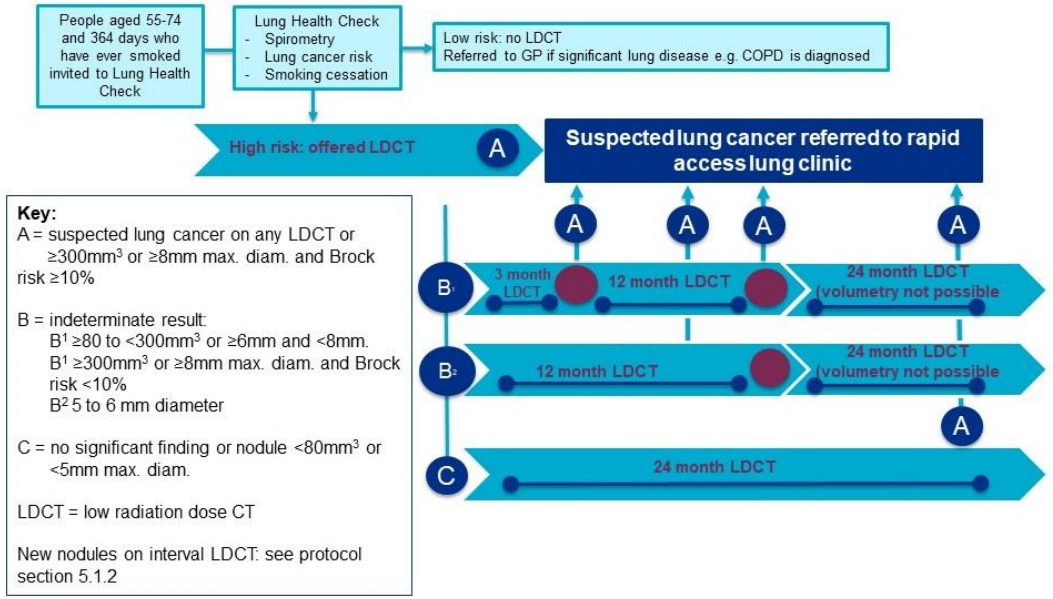
- National TLHC Programme has been running since in 2019
- Every Cancer Alliance in England has a Targeted Lung Health Check Programme (21)

- **People aged over 55 years old but less than 74 years old that have ever smoked will be invited to a free lung check.** Following the lung health check those assessed as **high risk** will be offered a **low dose CT scan to investigate possible cancer**.

- It is estimated that with the expansion of the programme, over the next 4 years **an additional 4,500 cancers could be diagnosed nationally, with 3,000 at an early stage.**

National Objectives:

- To invite 1m people to attend a lung health check (cumulatively covering 24% - 30% of the eligible population in England) by 23/24 year end
- To plan to expand TLHC delivery further in 2024/5, and achieve 100% coverage by 28/29
- To raise uptake of Lung Health Checks above 50% by year end 23/24
- To manage the national evaluation of the TLHC programme



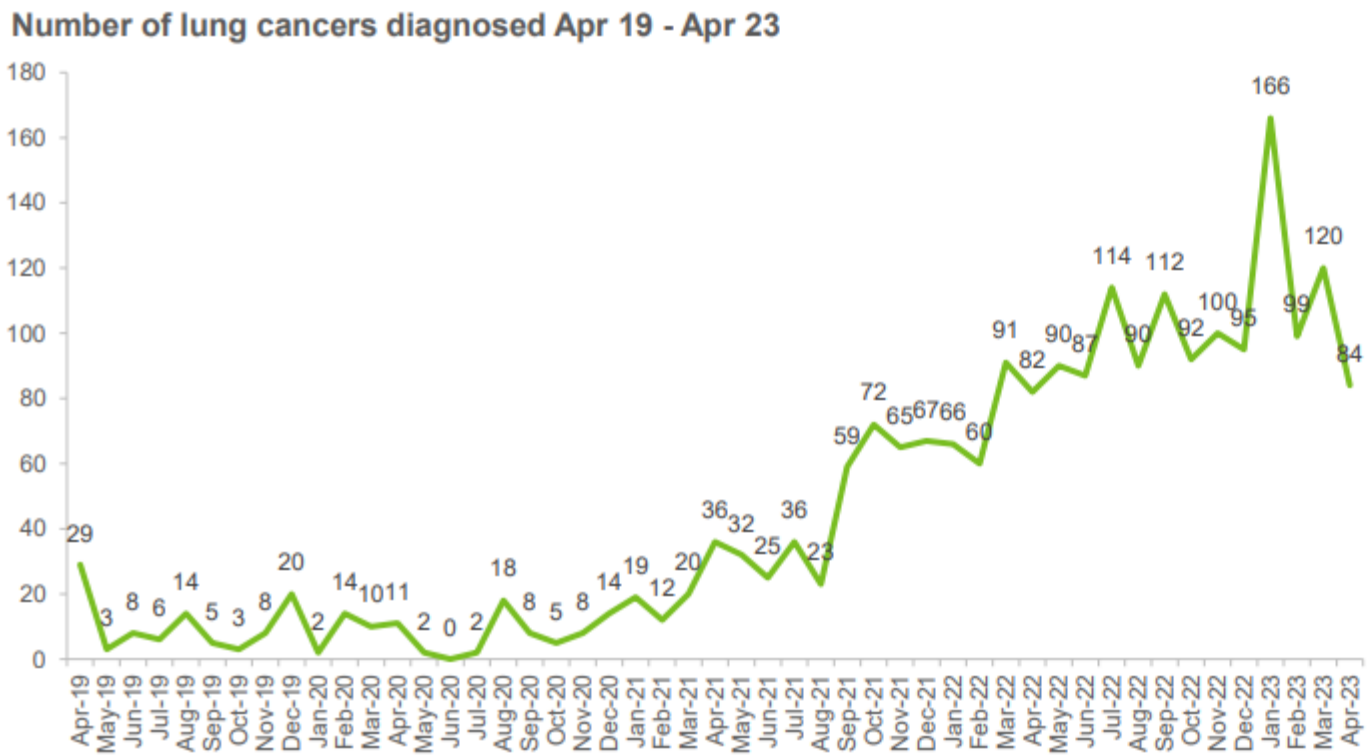
Targeted Lung Health Check Programme

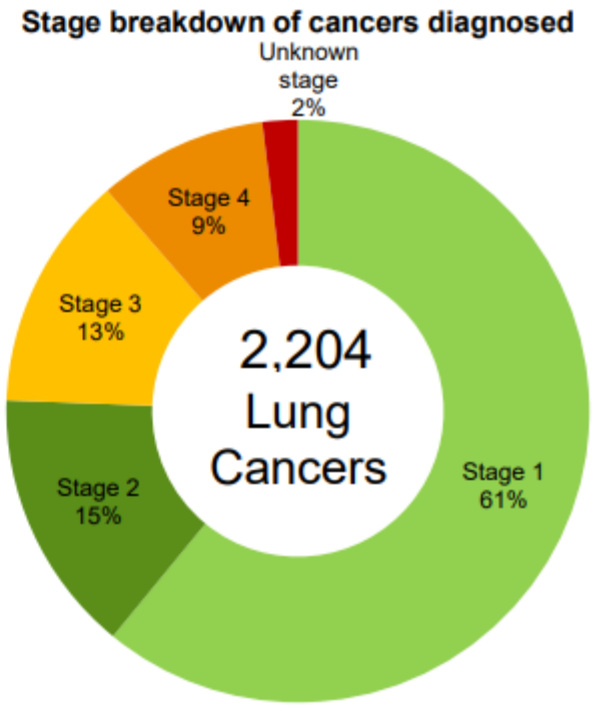
necs consultancy analytics Data, innovation and analysis

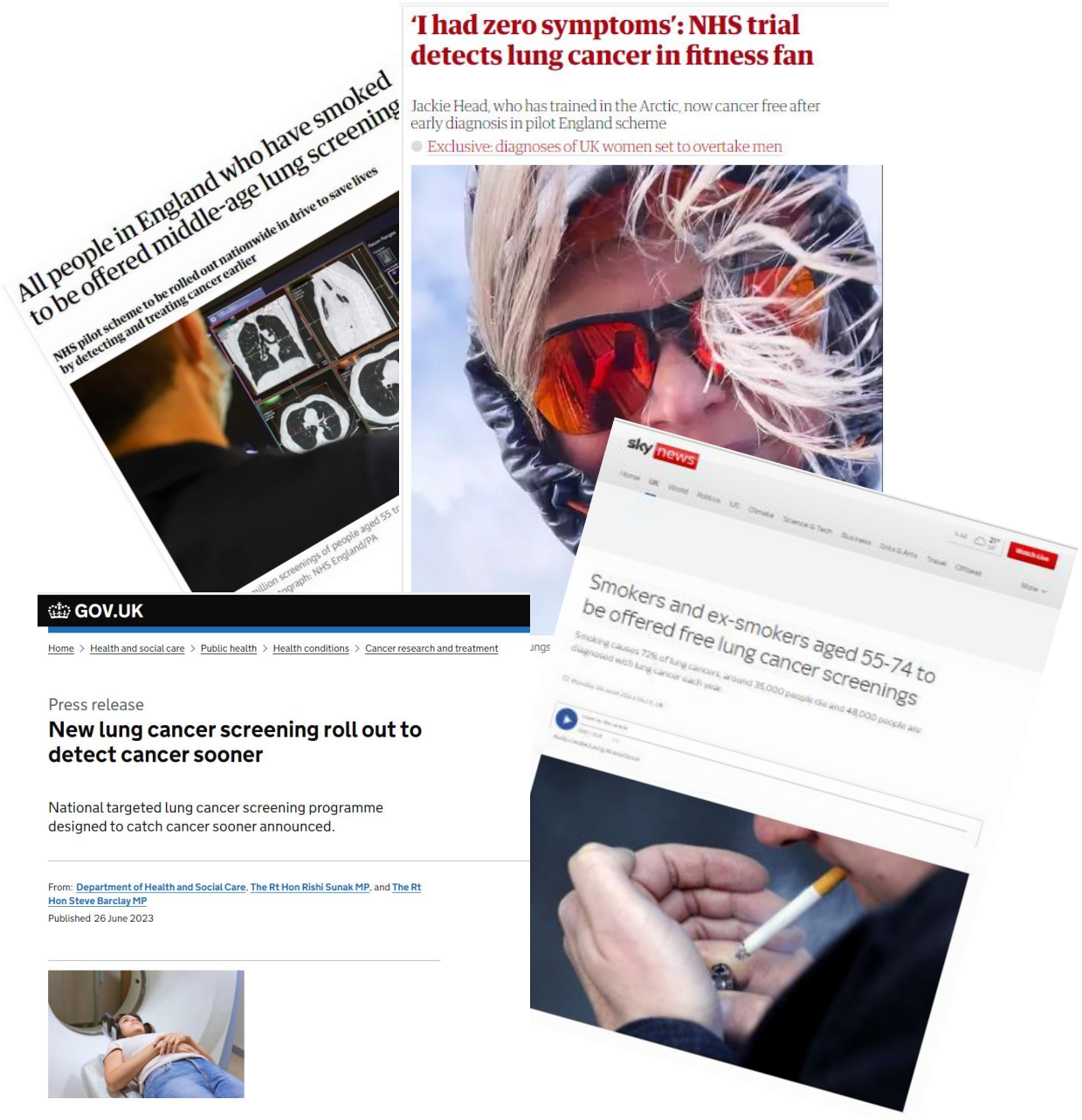
NHS

National programme lung cancer diagnosis data to date

from programe start up until Apr 2023







National Screening Programme

On Monday June 26th, the government announced that the Targeted Lung Health Checks programme will become a national lung screening programme.

Dame Cally Palmer, National Cancer Director, NHS England:

I wanted to thank you for all the hard work to get us to this point. Everyone who has worked on the TLHC programme has contributed to this outcome, from those on the front lines delivering assessments and scans to those ensuring everything runs as it should behind the scenes. We now have a firm commitment from both the Government and the NHS that TLHCs will be rolled out nationally, which is fantastic news.

The rollout of TLHCs will continue to be managed by the National Cancer Programme, and we have been anticipating this announcement and are already planning for national rollout. However, we will take this opportunity to consider next steps and to brief you on these as we develop the TLHC Programme.

LUNG CANCER IN SOUTH EAST LONDON

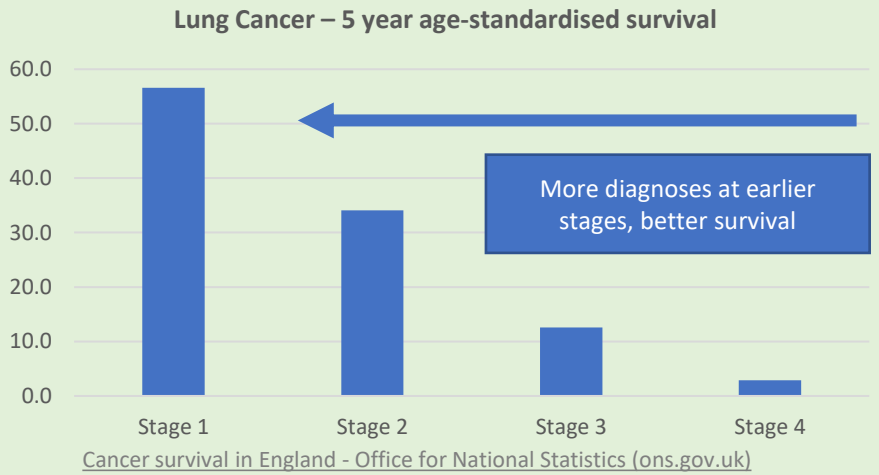
South East London Cancer Alliance

South East London has the **second highest rate of 'ever-smokers'** in London[4]	**Lung cancer incidence in SEL is the highest in London** (*85.1 vs London average of 71.4 per 100,000 pop.*), and one of the highest nationally[1]	**Lambeth, Southwark, Greenwich and Lewisham have one of the highest rates of lung cancer mortality** per 100,000 population in London (top 20%)[2].	**Currently, only 24% of lung cancers in South East London are diagnosed early (stage 1 & 2)[1]**

Clear and urgent need to improve earlier diagnosis of lung cancer

Targeted Lung Health Checks

Target High Risk Population → *Screen for Lung Cancer* → **Improve Earlier Diagnosis**



Cancer survival in England - Office for National Statistics (ons.gov.uk)

1. CancerData | 2. Public health profiles - OHID (phe.org.uk) | 3. GP Patient Survey - Public health profiles - OHID (phe.org.uk)

SEL TLHC Model

We have an ongoing smoking cessation and spirometry work steam with both Southwark and Greenwich teams. Agreed pathways for all eligible high risk to have level 1 VBA smoking cessation and spirometry on the unit. All eligible low risk to have smoking cessation within the community/public health services, depending on service capacity.

STEP 1
INVITE (Inizio – formerly Ashfield)

- Participants aged between 55 – 74 and registered with GP practice.
- Fixed appointment via letter and where possible text.

STEP 2
TELEPHONE RISK ASSESSEMENT (Inizio)

- Candidates stratified into high and low risk categories
- Verbal consent documented.
- Low risk candidates offered smoking cessation in the community.

STEP 3
FACE TO FACE (GSTT/AML)

- High risk participants only.
- Attends mobile unit for Spirometry, height and weight taken.
- Smoking cessation referral.

STEP 4
LOW DOSE CT (AML)

- Same day LDCT on mobile unit.
- Images reviewed by radiographer for acute findings.

STEP 5
REPORTING (TMC)

- Scan reported and audited.
- All normal and nodule findings sent to Ashfield.
- All incidental and cancers sent to GSTT PACS via IEP.

STEP 6
TLHC MDM (GSTT)

- TLHC FC organises every Monday.
- All cases reviewed and escalated via eRS TLHC pathways.
- Data recorded.

STEPS 2 and 3 – reasonable adjustments will be made translators, learning/physical disability etc..

SEL TLHC PROGRAMME ACTIVITY

NHS South East London Cancer Alliance

AREA Completing by December	SOUTHWARK	GREENWICH
TIME PERIOD	Oct – Feb 2023 May – July 2023	Jan- April 2023 July - Aug 2023
Eligible population	25,371	18,754
Total invites sent (minus non-smokers)	20,325	16,158
Total on-boarded	8,066	3,900
DNA from onboard call to LHC	30%	19%
Total LHC attended	6,188	3,011
LHC uptake rate from invites sent	**28%**	**19%**
High risk patient from LHC		
1st scans attended	4,121	
Follow up scans attended	478	
Referrals made to MDT	1,056	
% of total scans referred to MDT	**22%**	

MDM pathway

- CT scan images sent to external reporting company (TMC)
- Reports sent to Inizio and triaged by Inizio nurses
- Weekly screening MDM (GSTT) coordinated by TLHC team – responsible assessor/CNS, clinical director, responsible clinician at each trust

- Normal scans/lung nodules – **follow up scans coordinated by Inizio**. Not referred to screening MDM unless significant interval change in nodule. Patient and GP informed of results by letter. No action required by primary care
- Lung/non-lung cancer – referred to screening MDM. **TLHC MDM team will refer to appropriate trust via 2WW.** Patient will be contacted by telephone after screening MDM by TLHC CNS team. Patient and GP will receive letter
- Incidental findings – significant incidental findings are referred to screening MDM for review. **If secondary care appointment required, patient referred by TLHC nurses and patient will be contacted by telephone.** Some incidental findings referred to primary care – criteria based on national protocol and agreed with SEL primary care cancer leads/ICB/TLHC responsible clinicians (on behalf of trusts)

Incidental findings referred to screening MDM (referred to secondary care):

- Majority respiratory (e.g. ILD, moderate/severe emphysema) or referrals for imaging e.g liver/renal abnormalities)

Primary care incidental findings – advice provided by letter and handbook

- Coronary artery calcification - advice as per NICE guidance, local cardiology
- Aortic valve calcification – echo if new finding
- Symptomatic patients with obstructive spirometry – referred to GP with advice if new dx moderate COPD (assuming no significant emphysema), secondary care if severe and new dx
- Asymptomatic/mild disease (emphysema/spiro) - results sent to GP for information only. Main recommendation – smoking cessation (patients referred by Inizio or TLHC nurses), GP can refer for community diagnostics if symptomatic in future

SEL MDM TLHC GSTT activity – Nov 22 – Aug 23

NHS South East London Cancer Alliance

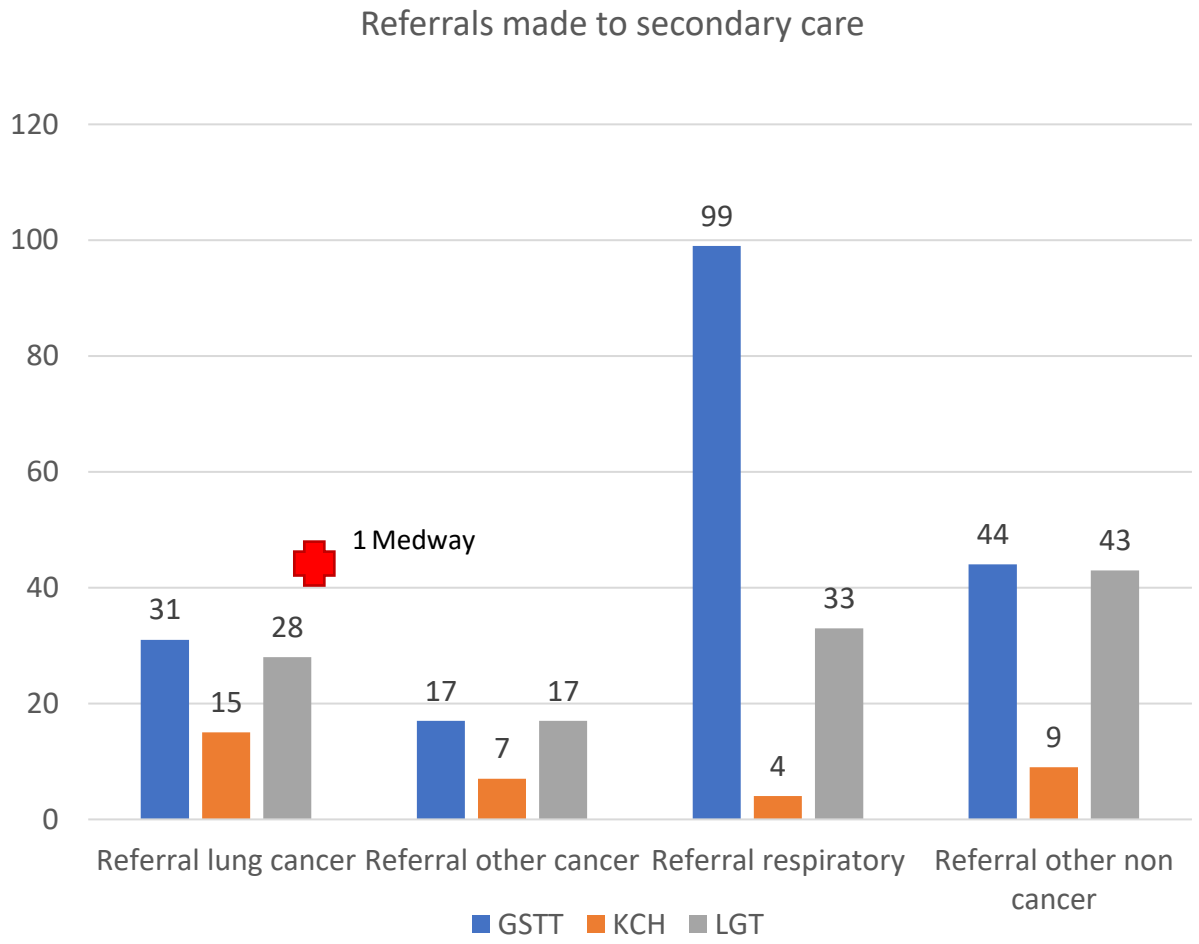
Screening meeting activity	Over 10 months	% of total MDM activity
Total CTs reviewed	1,056	
Back to programme	709	67%
Referral lung cancer	74	7%
Referral other cancer	41	4%
Referral respiratory	136	13%
Referral other non cancer	96	9%

26

Lung cancers diagnosed

35%

Lung cancers diagnosed from referrals

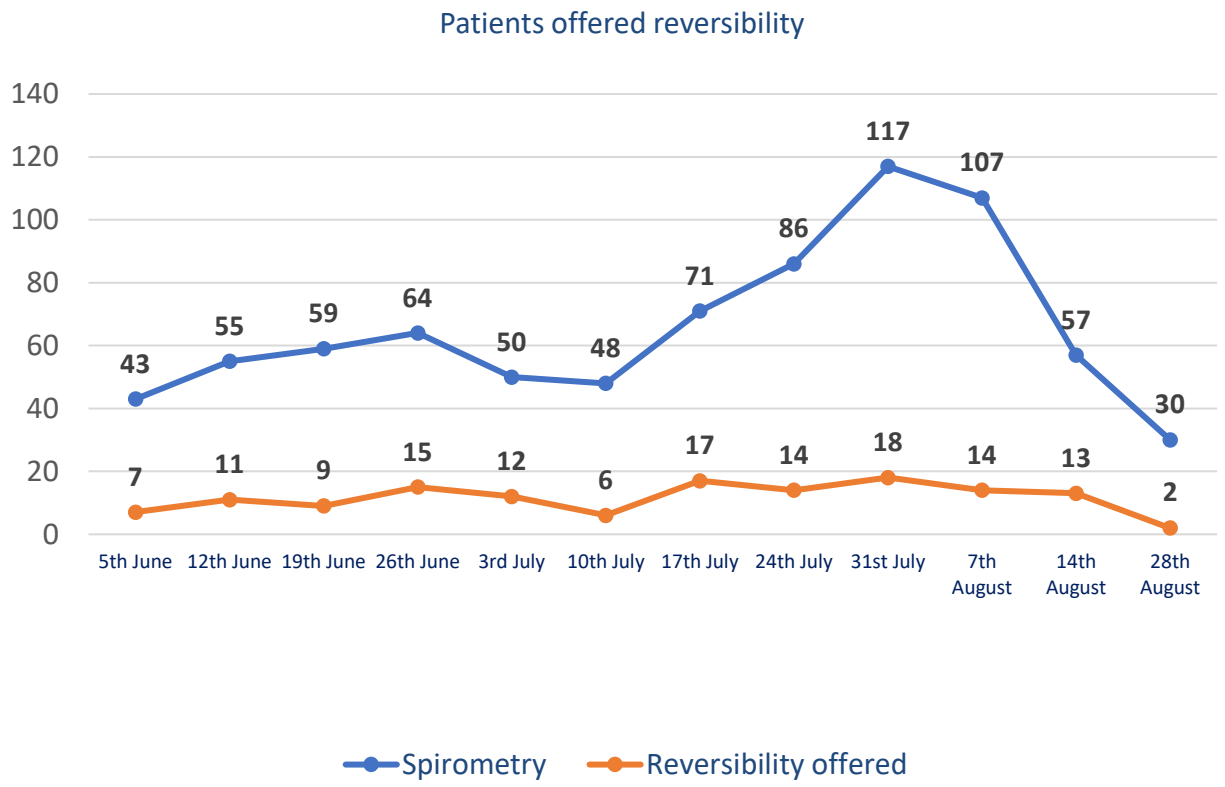


SEL TLHC– Update on Spirometry

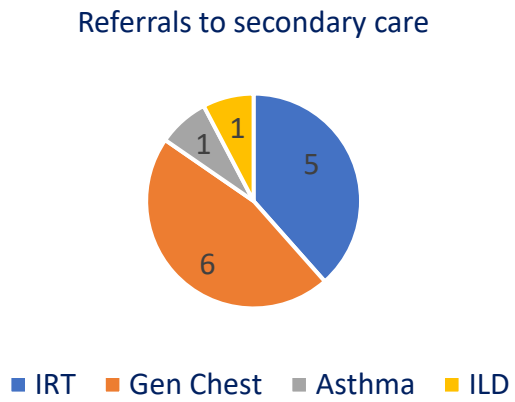
South East London Cancer Alliance

Spirometry is now performed on all those patients who don't have a known COPD diagnosis or previous spirometry:
- If 50% < FEV1 < 80% predicted ask the patient for symptoms of breathlessness/cough
  If symptomatic: offer reversibility appointment
  If not symptomatic: inform GP that if in the future they become symptomatic refer to community diagnostics.
- If FEV1 <50% à offer reversibility appointment.

Clinics runs every Monday at GSTT.



June – August 2023		%
Total spirometry tests	787	
Reversibility clinic appointment	138	18%
Total reversibility spirometry	77	56%
Referrals to secondary care	13	17%
Referrals to primary care for assessment	9	12%
GP informed of results - no action needed	48	62%
DNA	7	9%



SEL TLHC– next steps

South East London Cancer Alliance

Uptake rates

Aim to capture patients from Southwark/Greenwich that did not respond to invites. Further invite/attempt at contact

Assistance from SELCA comms

Incidental findings

Communication with primary care - clearer summary of results and actions in letters
clearer identification of patients already known to have conditions identified (eg IHD)
work in progress to establish if results can be sent via docman

Clinical management primary care - guidance revised with assistance of primary care leads (to be ratified via CRG)

-

South East London Integrated Care System

NHS South East London

Accurate Diagnosis of Respiratory Disease

Mr Edwards: 70 y/o male, retired postman

- SOBOE, dry cough, wheeze and chest tightness 8/12; MRC 2
- Ex smoker
- PMHx: HTN, NAFL, BCC, nasal polyps, allergic rhinitis

What would you do?

- 2 empirical courses of antibiotics and steroids in 12 months
- Salbutamol PRN
- O/E chest clear, oxygen saturation 95% on air
- CXR *"emphysematous change"*
- Cardiology investigations [normal], ACEI changed to ARB

→ You organise spirometry……

Mr Edwards: 70 y/o male, retired postman

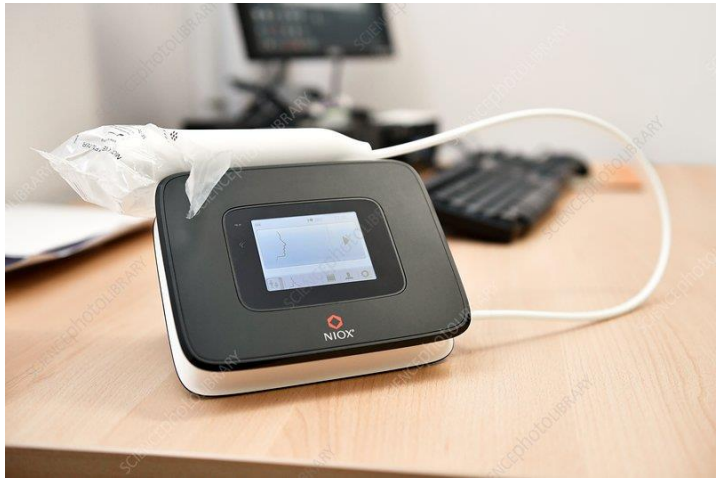
		Best	SR	% Pred	Pred	Pred LL	Post	% Change
Level date		01.03.19					01.03.19	
Level time		14:08					15:04	
Substance							Salbutamol	
Dose							400 mcg	
FEV1	L	2.81	-0.51	91.4	3.08	2.21	2.93	4.1
VC MAX	L	4.59	0.79	112.6	4.08	3.01	4.77	3.9
FEV1%M	%	61.26	-1.75	80.8	75.84	62.17	61.41	0.2
PEF	L/min	500	0.36	105.5	474	355	562	12.4

Mild airflow obstruction with no reversibility = no brainer for COPD?

But:

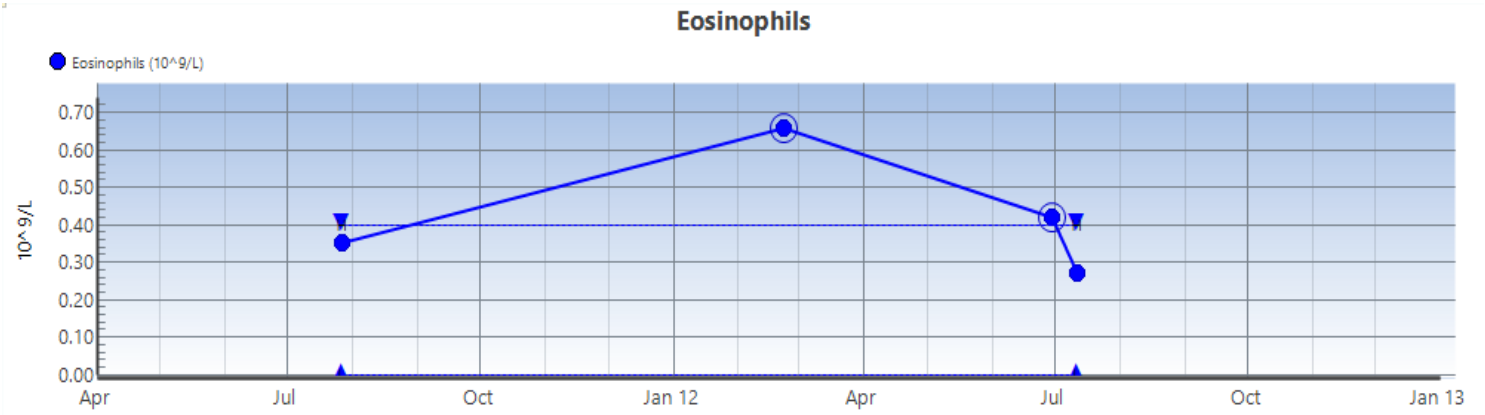
Smoking history: 10/day age 19-29 = <u>10 a day</u> x 10 years = 5 pack year

FeNo = 61ppb (Adults >17yrs normal = <40ppb)



Mr Edwards: 70 y/o male, retired postman

- Diagnosis = **Asthma with chronic airflow limitation**
- Corroboration = Previous eosinophilia in FBC



Learning Points:

- Not all fixed AFO is COPD
- Cannot diagnose COPD from CXR alone
- Quality assured spirometry with reversibility critical
- Look at the eosinophils
- FeNO helpful

Treat in line with Asthma guidelines
Treat breathlessness = pulmonary rehabilitation
Consider referral for specialist assessment if not controlled
+/- biologic therapy

South East London Integrated Care System

Objective testing

NHS South East London

Objective test: Use links for patient information	Peak Expiratory Flow Rate (PEFR) monitoring	Quality Assured Spirometry*7	Bronchodilator reversibility (BDR) $\beta_2$agonist or corticosteroid	Fractional exhaled nitric oxide (FeNO)	Direct bronchial challenge test (DBC)
What does it test?	Reversibility	Obstruction	Reversibility	Inflammation	Reversibility
Where is it done?	Can be offered by GP teams	Offered by community respiratory hub or secondary care			Only for adults and in specialist setting
Positive threshold for diagnosis	Variability> 20%	FEV1/FVC ratio <70% or below the lower limit of normal FEV1 increase ≥200mls or >12%		Adults ≥40ppb	
Notes	Each reading best of 3 hard and fast blows. Twice daily or more for at least 2 weeks Use charts and check patients can plot correctly, available from: Asthma and Lung UK. Watch this short video for help calculating PEFR variability	Take all inhalers to test. Before tests stop SABA for 4-6 hours, LABA for 36 hours, LAMA 36-48 hours, continue ICS. Before test avoid smoking for 24 hours, large meal or exercise. Wear loose clothing Normal spirometry does not exclude asthma Spirometry is less reliable at age extremes Spirometry and BDR usually offered together More details including contraindications Patient info; Spirometry - NHS (www.nhs.uk)		Results may be affected by steroid use, smoking, URTI and allergen exposure. NHSE patient FeNO information	

Spirometry should only be done by those on National Register of Certified Professionals and Operators (ARTP Spirometry)

Taken from the soon-to-be-published CESEL guide

Important points:

History, history and history!

Trigger? Timings of symptoms? Personal and FHx?

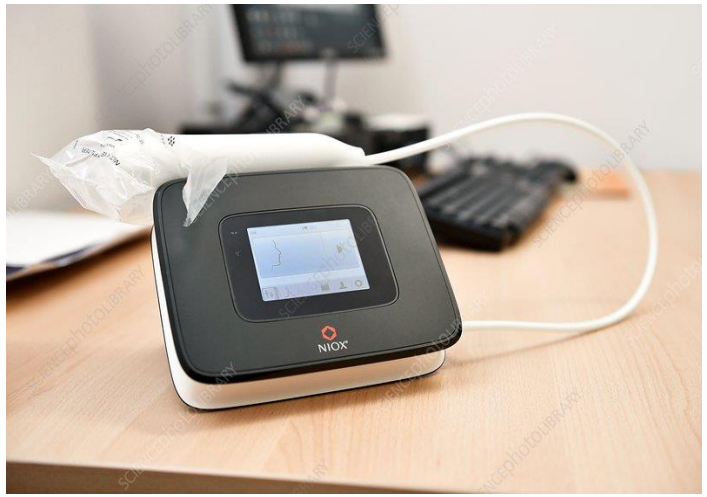
Smoking? Other inhaled substances inc. occupational exposure?

What is **FeNO**?

Fractional exhaled nitric oxide (FeNO) is a marker of eosinophilic inflammation.
Measured in the exhaled breath as part of a lung function test.
Can support the diagnosis of eosinophilic asthma – but can have other causes.

Box 3: Confounding factors that may result in an increased or decreased FeNO level[1]

Confounding factors that may INCREASE FeNO levels	Confounding factors that may DECREASE FeNO levels
FeNO levels may be higher than population norms in: • Men, tall individuals and those consuming a diet high in nitrates **FeNO levels may be elevated in:** • Patients with allergic rhinitis exposed to an allergen even in the absence of respiratory symptoms • Patients with active rhinovirus infection	**FeNO levels may be lower than population norms in:** • Children (a lower reference range must be used) **FeNO levels may be reduced in:** • Cigarette smokers • Patients recently treated with inhaled or oral corticosteroids



Quality-assured spirometry and FeNO

Should only be performed by appropriate-trained individuals with ARTP accreditation

Gives you numbers **which require clinical interpretation to reach diagnosis**

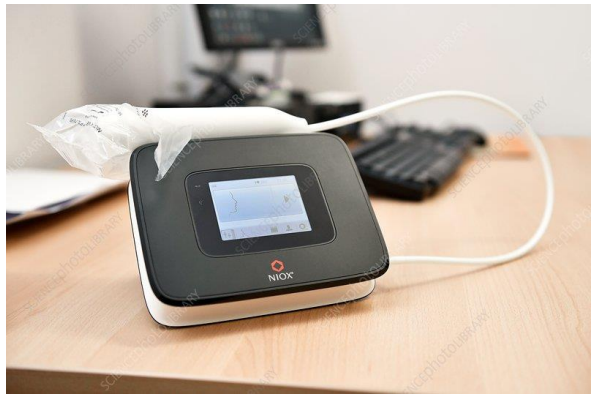
Mrs Jackson: 54 y/o female, retired book-keeper

- Increasing SOBOE and wheeze over 1 year
- MRC dyspnoea score 3
- Morning cough, productive with sputum
- Symptoms worse at night, not positional

- Ex smoker 30/day for 30 years = 45 pack years
- Salbutamol PRN
- O/E chest clear, oxygen saturation 93% on air

Mrs Jackson: 54 y/o female, retired book-keeper

	Pred	LLN	Pre Best	% Pred	Post Best	% Pred	% Change
FEV1 [L]	2.82	2.01	1.68	60	1.93	68	15
FVC [L]	3.74	2.74	3.12	83	3.55	95	14
VC_{MAX}	3.74	2.74	3.84	103	3.84	103	0
FEV1/ FVC	0.759	0.618	0.539	71	0.54	72	-1



Pre-bronchodilator spirometry = Moderate airflow obstruction

Post-bronchodilator spirometry = **250mls (15%) improvement** in FEV1 (12% together with 200ml increase is considered significant)

FeNO = 155 ppb

Post bronchodilator spirometry = remains obstructed; moderate obstruction

Mrs Jackson: 54 y/o female, retired book-keeper

Diagnosis = both **Asthma and COPD**

Learning points:

- Not all fixed AFO is just COPD
- Reversibility testing critical
- FeNO helpful
- Dual diagnosis of asthma and COPD in combination results in poorer outcome than COPD alone
- Failure to recognise it can result in under-treatment

Treat the asthma with an ICS
Treat the COPD with a long-acting bronchodilator
Need to be able to step up ICS if needed
Therefore ICS/LABA first step in Rx
Treat breathlessness – pulmonary rehabilitation
Consider referral for specialist assessment – full RFTs, CT chest, bloods, +/- biologic therapy

Ms Elliot: 49 y/o female, not in work

- SOBOE MRC 3
- Morning cough, productive with sputum
- Frequent “chest infections”
- Current **smoker** 30/day – started age 13
- PMH: ? Asthma; ? COPD; OSA on CPAP, fibromyalgia, depression; obesity with gastric bypass March 2018 complicated by **hospital acquired pneumonia**
- Mother died from COPD and “chest infection; Father lung cancer
- Salbutamol PRN, Symbicort 400/6 2 puff bd, Tiotropium 18 mcg/day
- O/E chest clear, oxygen saturation 94% on air; wt 100kg, **BMI 35**

Ms Elliot: 49-y-o female, not working

		Best	SR	% Pred	Pred	Pred LL	Post	% Change
Level date		19.02.19					19.02.19	
Level time		09:07					10:38	
FEV1	L	1.83	-2.82	61.7	2.96	2.31	2.13	16.6
VC MAX	L	2.45	-2.61	66.0	3.72	2.91	2.77	12.8
FEV1%M	%	74.57	-0.89	92.9	80.27	69.17	77.06	3.3
PEF	L/min	220	-3.32	55.1	399	310	260	18.2
MMEF	L/s	1.50	-1.82	52.3	2.86	1.61	1.85	23.7
TLC	L	4.00	-2.15	75.7	5.29	4.30		
VC	L	2.55	-2.39	68.7	3.72	2.91		
FRCpl	L	2.02	-1.58	71.9	2.81	1.99		
RV	L	1.45	-1.06	79.6	1.82	1.25		
RV%TLC	%	36.22	0.10	101.7	35.62	26.03		
TLCOcSB	mmol/(min*kPa)	7.51	-0.93	87.4	8.59	6.67		
KCOc	mmol/(min*kPa*L)	2.16	1.85	132.7	1.62	1.15		
Hb	g(Hb)/dL	12.50						
VA_SB	L	3.48		67.8	5.14	5.14		
VIN_SB	L	2.38	-2.78	63.9	3.72	2.91		

FeNO = 5ppb (Adults >17yrs normal = <40ppb)

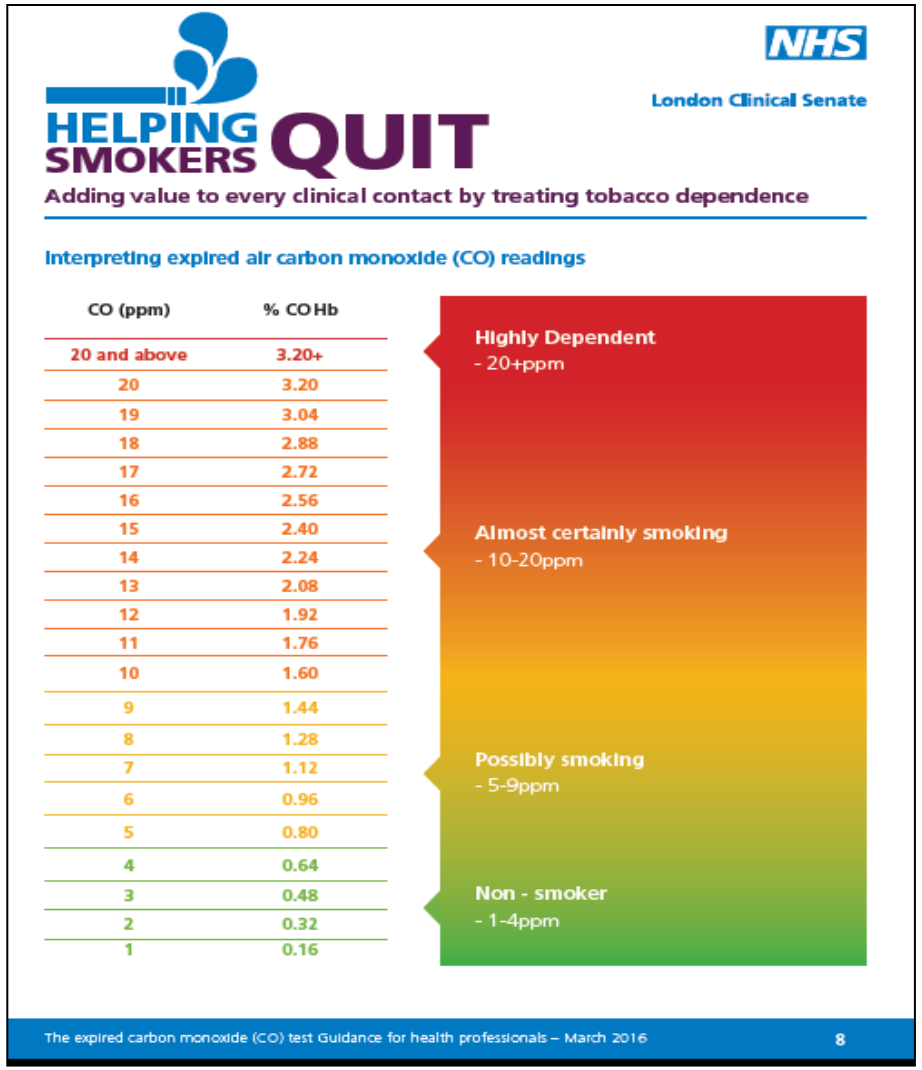
Ms Elliot: 49-y-o female, not working

		Best	SR	% Pred	Pred	Pred LL	Post	% Change
Level date		19.02.19					19.02.19	
Level time		09:07					10:38	
FEV1	L	1.83	-2.82	61.7	2.96	2.31	2.13	16.6
VC MAX	L	2.45	-2.61	66.0	3.72	2.91	2.77	12.8
FEV1%M	%	74.57	-0.89	92.9	80.27	69.17	77.06	3.3
PEF	L/min	220	-3.32	55.1	399	310	260	18.2
MMEF	L/s	1.50	-1.82	52.3	2.86	1.61	1.85	23.7
TLC	L	4.00	-2.15	75.7	5.29	4.30		
VC	L	2.55	-2.39	68.7	3.72	2.91		
FRCpl	L	2.02	-1.58	71.9	2.81	1.99		
RV	L	1.45	-1.06	79.6	1.82	1.25		
RV%TLC	%	36.22	0.10	101.7	35.62	26.03		
TLCOcSB	mmol/(min*kPa)	7.51	-0.93	87.4	8.59	6.67		
KCOc	mmol/(min*kPa*L)	2.16	1.85	132.7	1.62	1.15		
Hb	g(Hb)/dL	12.50						
VA_SB	L	3.48		67.8	5.14	5.14		
VIN_SB	L	2.38	-2.78	63.9	3.72	2.91		

Restrictive lung function = BMI
300ml/16% reversibility but normal FeNO
Small lungs = normal corrected gas transfer

Ms Elliot: 49-y-o female, not working

Exhaled CO = 20ppm



HELPING SMOKERS QUIT

NHS London Clinical Senate

Adding value to every clinical contact by treating tobacco dependence

Interpreting expired air carbon monoxide (CO) readings

CO (ppm)	% CO Hb
20 and above	3.20+
20	3.20
19	3.04
18	2.88
17	2.72
16	2.56
15	2.40
14	2.24
13	2.08
12	1.92
11	1.76
10	1.60
9	1.44
8	1.28
7	1.12
6	0.96
5	0.80
4	0.64
3	0.48
2	0.32
1	0.16

The expired carbon monoxide (CO) test Guidance for health professionals – March 2016 8

Highly tobacco dependent

- Stopped smoking with dual NRT for 18/12 before gastric bypass
- Relapsed post surgery
- Not keen on NRT: told could not have Varenicline due to hx of depression
- *"the damage is done"* – belief she had COPD (low motivation to quit)
- implicit belief that pre-destined to end up like mother (hopelessness)
- Honest conversation = does not take inhalers (fear) or see GP for antibiotics

Ms Elliot: 49-y-o female, not working

Diagnosis

- Tobacco dependence driving most respiratory symptoms
- cough and sputum= chronic bronchitis
- “chest infections” = acute bacterial bronchitis
- Breathlessness = BMI and deconditioning
- Possible asthma [smoking reduces FeNO]

Complex psychological factors at play exacerbated by…

Over-medicalisation, incorrect diagnosis, incorrect and over-treatment

Treatment

- Provide **reassurance, explanation and hope**
- Very brief advice on smoking
- Smoking cessation referral
- Evidence based discussion about nicotine containing vape
- Stop Tiotropium, step down LABA/ICS but continue for now and reassess
- Social prescribing referral – Community Connect

South East London Integrated Care System

NHS South East London

Clinical Effectiveness South East London

Asthma in adults

- 18 years and over
- A guide for South East London General Practice©

Key Messages

- All patients should be treated with an inhaled corticosteroid (ICS) to reduce airway inflammation.
- Short acting beta agonists (SABA) provide short term relief only and should always be used alongside a regular ICS. SABA overuse risks exacerbations.
- Check adherence, inhaler technique and update personal asthma action plan (PAAP) at least annually.
- Document your reasons for diagnosing asthma or suspected asthma.

CESEL Children and Young People's Asthma guide LINK HERE

Asthma diagnosis[9,10]

There is not a single, definitive test for asthma. Asthma diagnosis should be made based on history and ideally supported by objective tests. There is variable availability of objective tests across SEL, See here for local referral pathways.

6/6 features = high probability of asthma

1-5/6 features = intermediate probability of asthma

Features to support asthma diagnosis

1	2	3	4	5	6
Recurrent episodes of cough, wheeze, chest tightness and shortness of breath.	Symptom variation e.g. throughout the day and between seasons.	Absence of symptoms suggestive of an alternative diagnosis (exclude red flags).	Recorded clinical observation of wheeze. Opportunistically check and record this whenever possible.	Personal/family history of atopy +/- raised eosinophils as indicator of atopy.	Positive Peak expiratory flow rate (PEFR) monitoring or FEV1 variance. See here

Features may occur over time, and so recording each one when they occur in patient notes is important.

Presence of ≥ 1 feature to support asthma diagnosis?

NO → Consider alternative diagnosis

YES

Objective tests available and patient suitable?

NO → **PEFR monitoring and trial with ICS**

Undertake PEFR monitoring and if positive a trial with ICS over 6-8 weeks assessed using the Asthma Control Test™ and ideally FEV1 and/or serial PEFR

DO NOT DELAY TREATMENT IF YOU HAVE A HIGH CLINICAL SUSPICION OF ASTHMA AND OBJECTIVE TESTS ARE NOT AVAILABLE OR THERE IS A DELAY IN ACCESS.

YES

Asthma diagnosis supported by objective tests

Quality Assured Spirometry
Fractional exhaled nitric oxide (FeNO)
Bronchodilator reversibility
Peak Expiratory Flow Rate (PEFR) monitoring
Direct Bronchial Challenge Test

- **Objective tests indicate a positive diagnosis** → ASTHMA
- **Objective tests indicate an uncertain diagnosis** → SUSPECTED ASTHMA

Positive result

Asthma diagnosis in the absence of objective tests

Asthma diagnosis is a clinical decision based on high asthma probability and positive outcome of trial with ICS.

Clinical decision → ASTHMA

Negative or uncertain result

Uncertain?

Only a few features to support diagnosis of asthma?
Negative or uncertain response to ICS trial?
Undertake an ICS trial and then withdrawal of treatment. If symptoms resolve with treatment and then return when treatment is withdrawn asthma is more likely. Natural resolution of symptoms is more common in CYP than adults.

The benefits of a confirmed asthma diagnosis may outweigh the risks of uncertainty of suspected asthma for patients and their carers.

Clinical decision → SUSPECTED ASTHMA

ASTHMA	SUSPECTED ASTHMA	POOR RESPONSE TO TREATMENT OR ATYPICAL FEATURES?
Confirm asthma or suspected diagnosis with patient. Ensure understanding. Code diagnosis using Ardens template. Record basis on which diagnosis has been made. Agree on a management/asthma action plan with patient and review date	Offer the same level of care for suspected asthma confirmed asthma, with appropriate treatment and at least annual review. Consider objective tests again or when available, especially if symptomatic.	Check adherence and inhaler technique, review diagnosis, and consider referral

South East London Integrated Care System

NHS South East London

South East London Integrated Guideline for the Management of Chronic Obstructive Pulmonary Disease

Get the diagnosis right: clinical history and quality-assured diagnostic spirometry

Find patients at risk of COPD:

Age > 35yrs and current smoker or ex-smoker with 1 or more symptoms:

- Exertional breathlessness
- Chronic cough or wheeze
- Regular sputum production
- History of chest infections

Confirm diagnosis using quality assured post-bronchodilator spirometry

- COPD may be present if the post-bronchodilator FEV1/FVC (339m) is <0.7
- Request chest x-ray, full blood count, creatinine and electrolytes in all patients

Identify ex/current smokers with a co-existent diagnosis of asthma

- Could the diagnosis be COPD alone or could they have asthma *AND* COPD?

Assess for features of asthma:

- Seasonal or environmental triggers
- Nocturnal symptoms or variability in symptoms
- History or rhinitis, eczema or atopy
- Peripheral blood eosinophilia (≥0.3)
- Elevated Fractionated exhaled Nitric Oxide (FeNO)

https://www.selondonics.org/wp-content/uploads/dlm_uploads/2022/11/COPD-guideline-SEL-updated-FINAL-December-2020.pdf Soon to be updated

Local services/pathways – Southwark Adults

Services Offered	Objective Testing	Diagnostic & management support	Referral criteria	How to refer
Integrated Respiratory Team (IRT): Community Lung Function service:	Yes	No	16+ years New symptoms of asthma and/or COPD, or Old spirometry not meeting quality standards/results do not support current diagnosis	Complete IRT referral form (DXS) – select Community Lung Function Service. Refer via eRS → 'Diagnostic Physiological Measurement' → 'Respiratory – Full Lung Function' → 'Community Lung Function Service – (name of the location) Attach IRT referral form
Integrated Respiratory Team (IRT) Hospital Chest Clinic Kings College Hospital (KCH) & Guys and St Thomas' Hospital (GSTT)	No	Yes	Aged 16+ Please ensure patients have had diagnostic tests provided by the Community Lung Function (above) if indicated	Complete IRT referral form (DXS) Choose: Hospital Chest Clinic Service Refer via eRS → Asthma, Guy's site – Respiratory Medicine – Guy's & St Thomas' – RJ1 eRS → Chest, Guy's site – Respiratory Medicine – Guy's & St Thomas' – RJ1 Attach IRT referral form
Adult advice			16 years and over	If your enquiry is URGENT King's TALK service includes acute medicine: 020 3299 6613 Monday-Friday 8.30am – midnight, weekends 8.30am-8pm. GSTT GP Direct Line: 020 7188 4488

Local services/pathways – Southwark Adults

Select	Miles	Appointment Type	Service Name	Indicative Appointment Wait	Indicative Treatment Wait	Directly Bookable	Referrer Alert	Link to NHS Choices	Location
☐	2	First outpatient	Community Lung Function Service - Herne Hill Road Medical Centre for King's College Hospital - RJZ78	180 Days		Yes	ℹ	ℹ	HERNE HIL ROAD MEDICAL CENTRE
☐	2	First outpatient	Community Lung Function Test - Acorn & Gaumont House Surgery for King's College Hospital - RJZ83	150 Days		Yes	ℹ	ℹ	ACORN & GAUMONT HOUSE SURGERY
☐	3	First outpatient	Community Lung Function Test -Tessa Jowell for King's College Hospital - RJZ83	175 Days		Yes		ℹ	KINGS @ TESSA JOWELL HEALTH CENTRE
☐	4	First outpatient	Community Lung Function Test - Deerbrook Surgery for King's College Hospital - RJZ83	180 Days		Yes		ℹ	DEERBROOK SURGERY

Location
HERNE HIL ROAD MEDICAL CENTRE
ACORN & GAUMONT HOUSE SURGERY
KINGS @ TESSA JOWELL HEALTH CENTRE
DEERBROOK SURGERY

- Loughborough Jct.
- Peckham – Peckham High Street
- East Dulwich
- Tulse Hill

Local services/pathways – Southwark Children

Services Offered	Objective Testing	Diagnostic & management support	Referral criteria	How to refer
Specialist Asthma Nursing Team	No	Yes	Ages 0-15 Registered with a GP in Southwark or Lambeth Diagnosed with asthma or suspected asthma	Either patient/family to fill in a health-check questionnaire includes a health support pack and/or a 1:1 specialist nurse assessment or Patch children's community nursing team | Evelina London
CYP advice and referrals	No	Yes	0-16 years	Each PCN in Lambeth and Southwark have a child health team. Please add the child to the 'PCN CYP Triage List' on the EMIS PCN system, for discussion at the weekly triage meeting comprising of a Paediatrician, CYP GP Lead, nurse from the Patch Children's Community Nursing team. Ensure you state the clinical question(s)/what you would like advice on. GSTT: Consultant paediatrician telephone advice: Monday to Friday 11am-7pm 07557 159092 KCH: TALK service 0203 299 6613 Monday-Friday 8.30am – midnight, weekends 8.30am-8pm Via eRS Paediatric clinic kch-tr.chestunitadmin@nhs.net

South East London Integrated Care System

NHS South East London

Questions?

South East London Integrated Care System

SEL Pulmonary Rehabilitation Network

Information for referrers

Pulmonary Rehabilitation

- PR Service Challenges
- What is PR and why refer?
- Who is suitable for PR?
- PR myths
- Coding
- Kings Hospital PR service

SOUTH EAST LONDON PULMONARY REHAB

SEL INTEGRATED CARE SYSTEM

PR Services: Challenges

- **National target to increase referrals to PR to 60% - SEL QOF referral rate 2022-23: 56%**
- Health inequalities – low referral rate from patients with diverse background
- Lack of appropriate information from referrers to patients on the benefits of PR and what to expect from participation to the programme
- High proportion of inappropriate referrals → impact PR waiting times
- **National target 85% referral to enrolment < 90 days - SEL currently ~20%**
- Adherence, retention and programme completion rates low - multi-factorial reasons

PR educational videos: *having the right conversation at the right time*

Collaboration of 6 SEL PR services, patients and PR ambassadors

What is Pulmonary Rehabilitation

SCAN ME

What is PR: Summary

- Pulmonary rehabilitation (PR) is an **exercise and education programme** designed for people with breathlessness.
- Programmes are **multi-disciplinary** and **individually tailored.**
- Improves patients' physical health, mental well-being and quality of life.
- Part of **British Thoracic Society (BTS) requirements / NICE guidelines**.

Each course typically lasts **6 to 8 weeks** (either in-person or online)

Two group sessions each week that involve exercise and education

Each session is led by 2 members of staff, at least one of which is qualified

Why refer to PR?

PR is effective:

- ✓relieves dyspnoea & fatigue
- ✓improves emotional function
- ✓enhances patients' control
- ✓Is an important component of managing COPD

No more clinical trials required to prove the above benefits

Cochrane Meta-analysis by McCarthy B. et al, 2015

PR improves exercise capacity more than available pharmacological treatments*

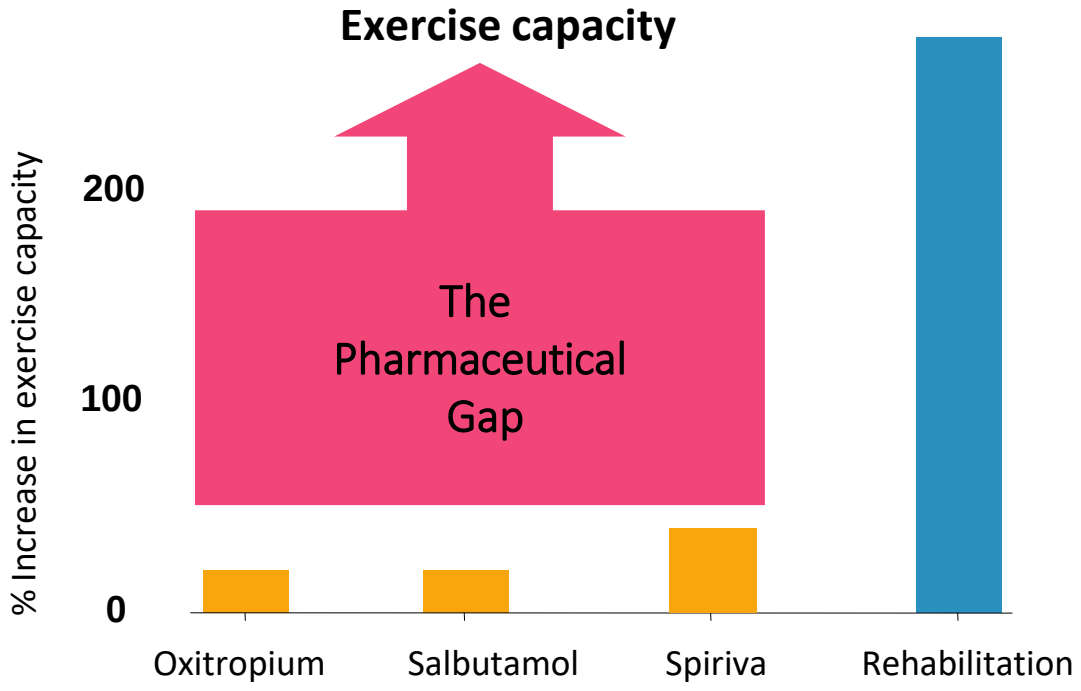
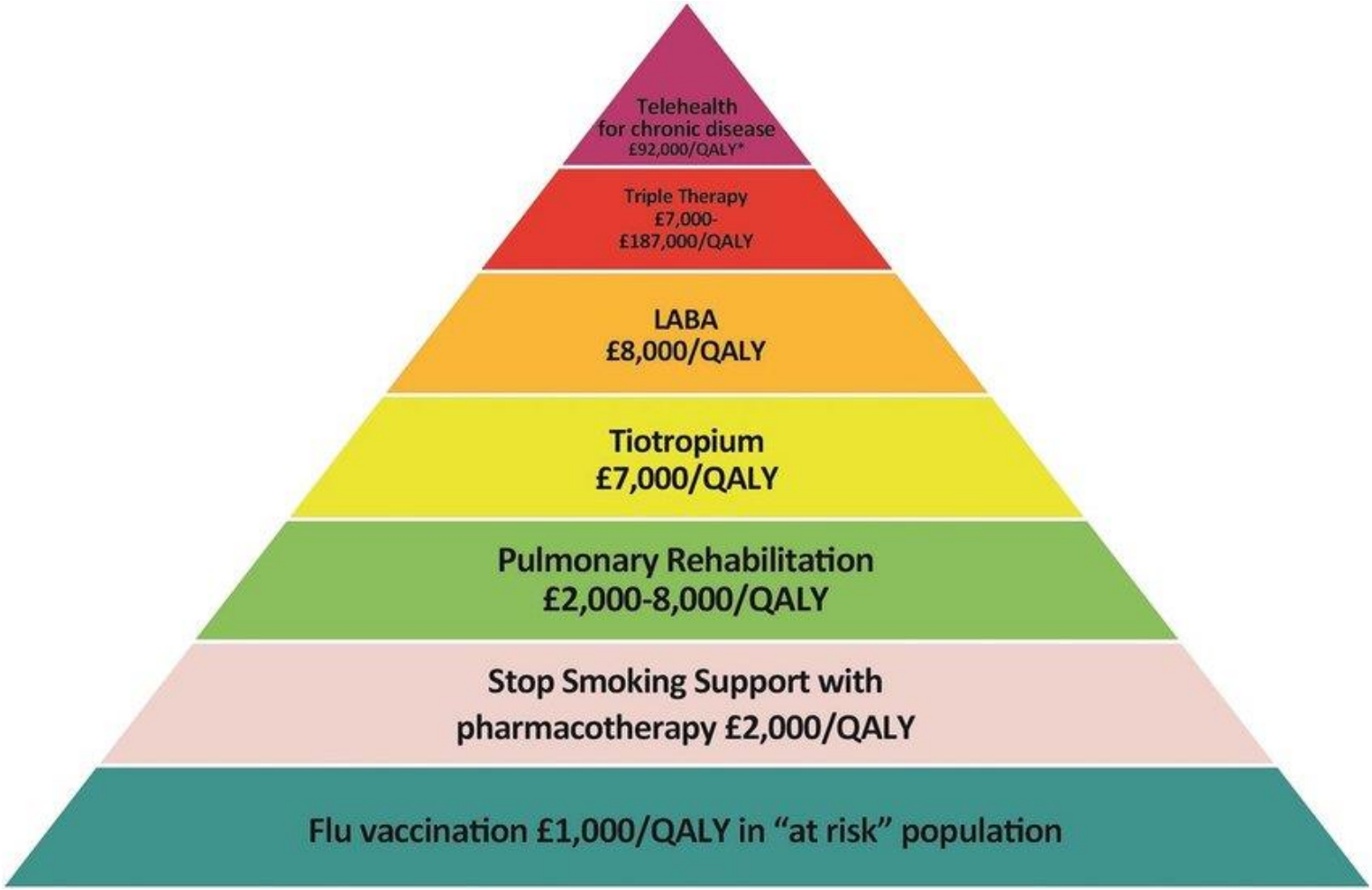


*Image Courtesy Dr I Dougall, Astra Zeneca, UK

Benefits of PR for our health and care system

- Reduces number of exacerbations through primary care (van Ranst et al., 2014)
- Reduces number of A&E visits (Man et al., 2004)
- Cost effective for patients with COPD - saves **£152** per patient (Griffiths et al., 2001)



Who is suitable to refer to PR?

SCAN ME

Who to refer to PR Summary

Patients **should be referred** to PR if:

- ✓ They have a confirmed respiratory diagnosis
- ✓ They complain of breathlessness that limits their functional ability
- ✓ They have an **MRC score of 2 or more** (see Appendix for further detail)
- ✓ They want to attend and can commit to the full course

Patients **should not be referred** to PR if:

- ✗ They have significant co-morbidities that will limit ability to safely exercise (e.g., abdominal aortic aneurysm (AAA) >5.5cm, unstable cardiovascular disease, unexplained frequent falls)
- ✗ The patient has completed a PR programme within the last 12 months

What does a good consultation on PR look like?

Across SEL 60% of referrals do not result in an assessment

- A brief explanation of PR, what to expect and an overview of the benefits for patients
- Discussion of challenges or barriers that might prevent the patient from attending PR
- Direction to further resources:
  Pulmonary rehabilitation (PR) | Asthma + Lung UK (asthmaandlung.org.uk)
  Pulmonary Rehabilitation - South East London ICS (selondonics.org)

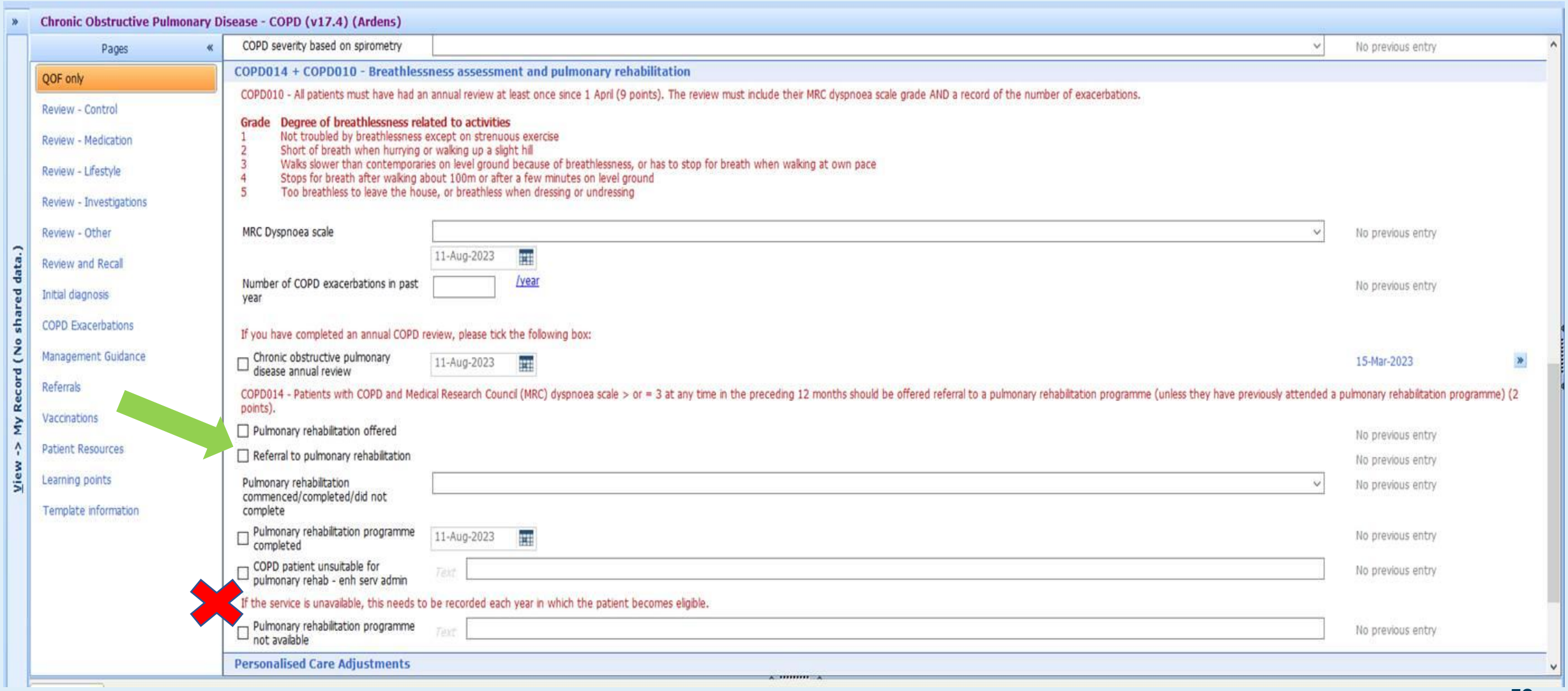
Debunking PR myths

Not fit enough	• Exercises are tailored to the patient, and they can go at their own pace.
Too old	• Most patients are aged between 60 and 70. No upper limit.
I still smoke, so I can't go	• Evidence shows that they benefit just as much as non-smokers.
PR is breathing exercises	• It is exercise and education! Manage patients' expectations so they engage.
I can't attend as I don't speak English	• There are translation services available to support patients at PR.
PR will support weight loss	• Incorrect. It is not a weight loss programme.

South East London Integrated Care System

Ardens COPD Template

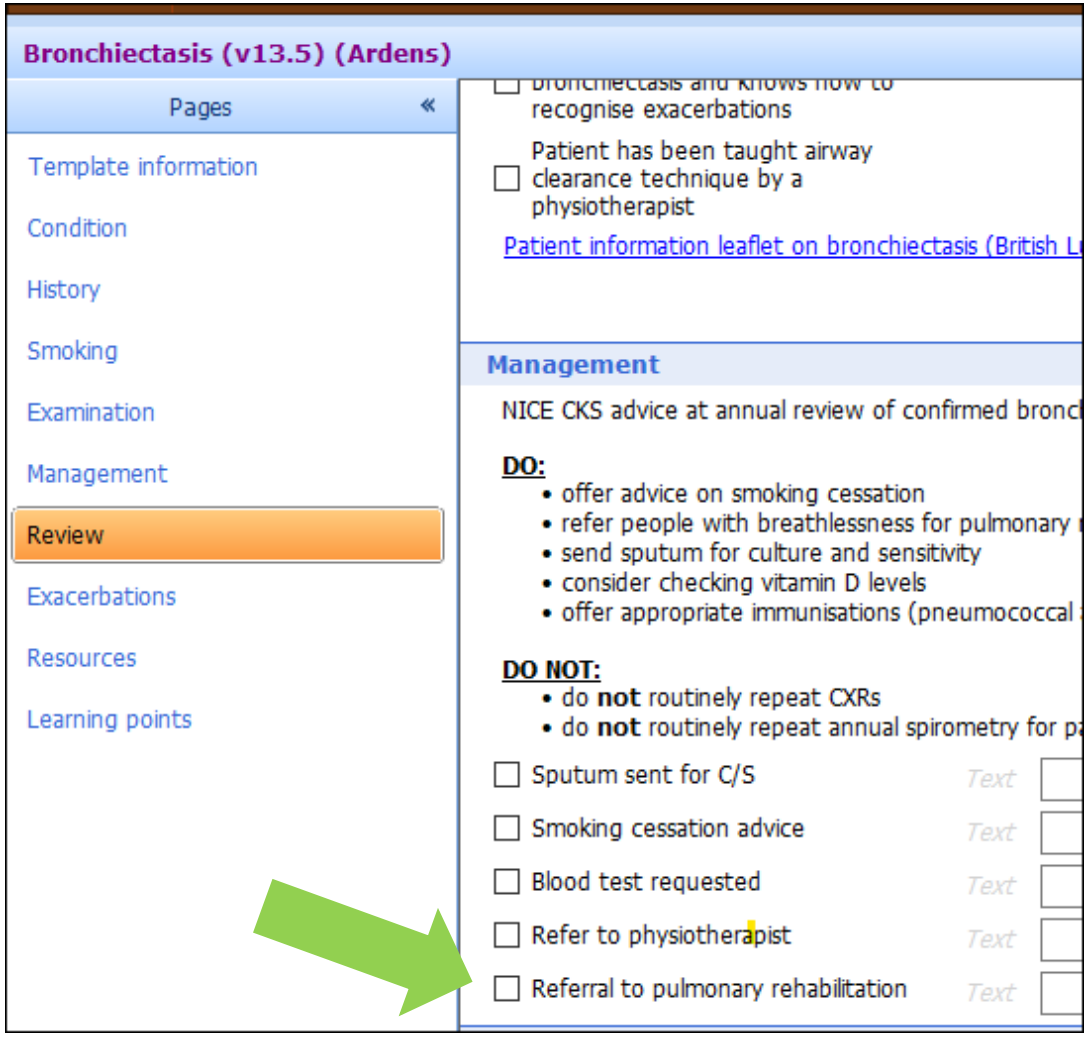
NHS South East London



South East London Integrated Care System

Ardens Bronchiectasis Template

NHS South East London

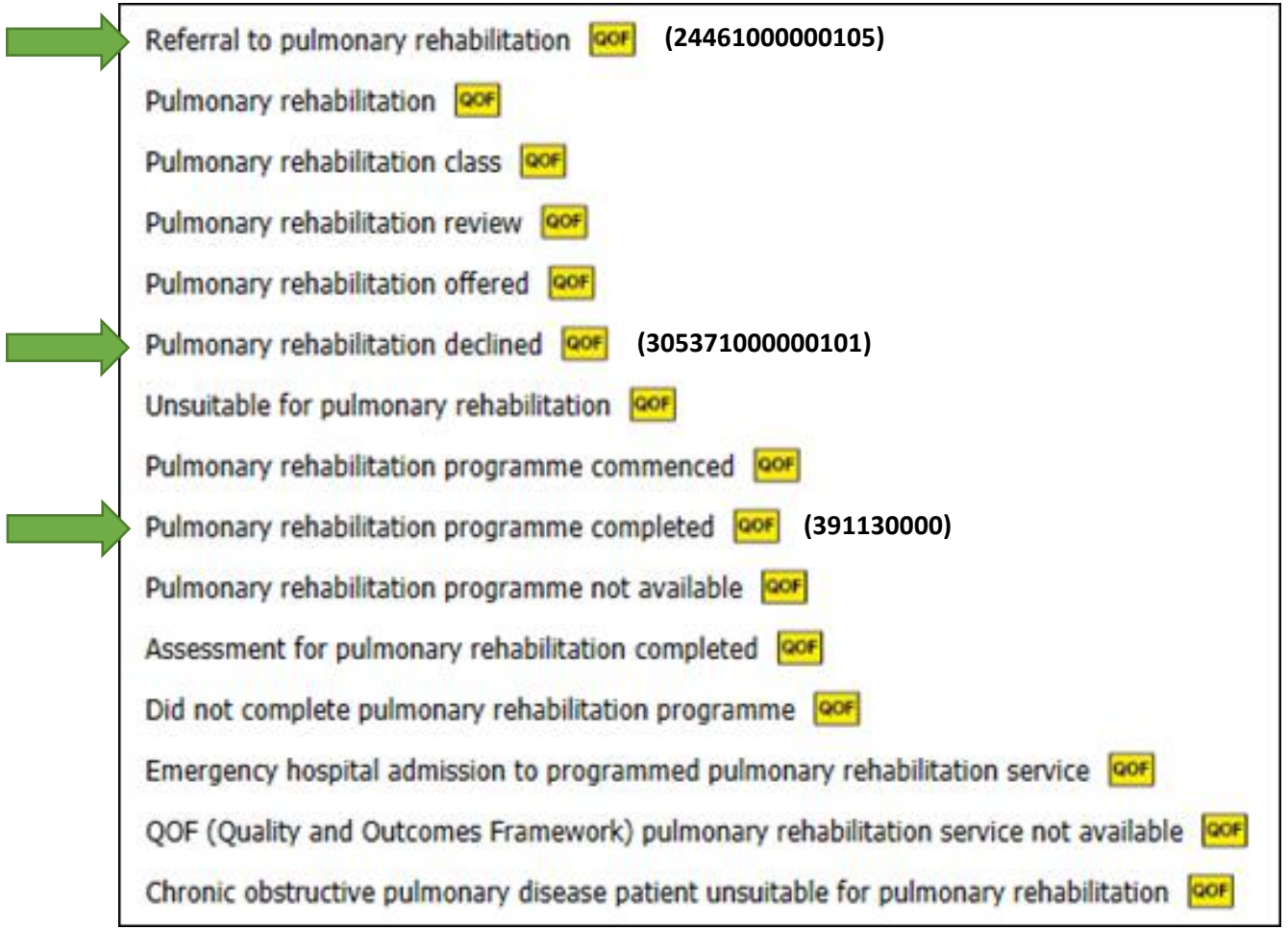


SNOMED CODES

There are multiple codes in Snomed for PR
All compatible with QOF

However NHSE London has identified codes to enable collation of data on PR referral and completion rates.

Snomed Codes to be added to Lambeth and Southwark PR Discharge letters once EPIC rollout complete.



Lambeth and Southwark PR Service Info

- King's College Hospital PR & Guy's and St Thomas' Hospital PR
- Location of venues:

KINGS PR venues	Dulwich Leisure Centre 2B Crystal Palace Rd, London SE22 9HB Tuesday 13:15-14:45 Thursday: 13:15- 14:15	Brixton Recreation Centre 27 Brixton Station Rd, London SW9 8QQ Wednesday 13:00-14:30 Friday 13:00-14:00	Streatham Leisure Centre 390 Streatham High Rd. London SE16 6HX Tuesday 9.30 – 10.30 Friday 9.30 – 11.00	Willow Field Centre Kings College Hospital GROUP 1 Monday 13.45 – 14.45 Friday – 13.30 – 14.30 GROUP 2 Monday 14.15 – 16.15 Friday 15.00 – 16.00
GSTT PR Venues	Physiotherapy - 3rd floor Lambeth Wing, St Thomas' Hospital SE1 7EH Group A: Monday 14:00-15:30 Thursday 12:30-14:00	Physiotherapy - 3rd floor Lambeth Wing, St Thomas' Hospital SE1 7EH Group B: Tuesday 14:00-15:30 Thursday 14:30-16:00	Southbank University, Elephant & Castle TBC	

South East London Integrated Care System

NHS South East London

Questions?

South East London Integrated Care System

NHS South East London

SEL asthma guideline support

Reducing variation and increasing equitable access to optimal care in asthma

What we hope you will take home today

- What's the problem with asthma care?
- The Clinical Emergency – SABA overuse
- The Climate Emergency - Sustainable asthma care
- How are we doing in Southwark?
- What is AIR and who is it for?
- AIR Evidence Review

With thanks to: Sian Howell, Cheryl Leung, Irem Patel, Maeve Savage, LJ Smith and the whole of the CESEL and SEL RRP teams

What's the problem with asthma care?

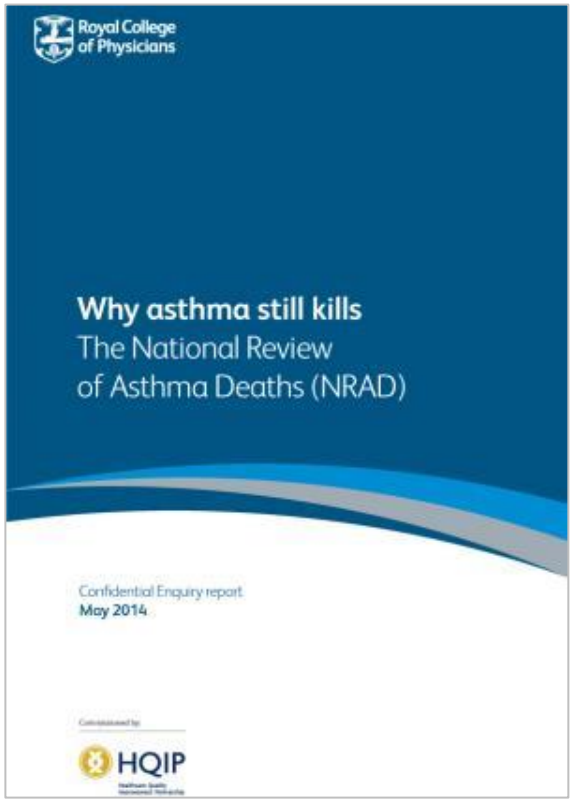


Table 4.4.1 Demographic and personal characteristics of 195 people who, the panels concluded, died from asthma[a]

		n (%)
Gender	Male/female	80 (41)/115 (59)
Age at death, years (N=193)	Minimum–maximum; median (IQR)	4–97; 58 (40–74)
Age group, years	<10	10 (5)
	10–19	18 (9)
	20–44	33 (17)
	45–64	50 (26)
	65–74	35 (18)
	75+	47 (24)
Latest BMI, kg/m^2 (N=121)	Minimum–maximum; median (IQR)	13.3–56.9; 27 (22–31)
	<20	21 (17)
	20–24.9	32 (26)
	25–29.9 (overweight)	30 (25)
	30+ (obese or very obese)	38 (31)
Psychosocial and learning disability factors (N=190)	Depression	29 (15)
	Anxiety	33 (17)
	Psychiatric treatment in the last 12 months	16 (8)
	Drug or alcohol abuse	11 (6)
	Deliberate self-harm	4 (2)
	Learning disability	4 (2)
	Social isolation/lives alone	14 (7)
	Other	43 (23)
	One or more of the above specified	84 (44)
If child aged <18 years (N=28)	Known to social services and documented in medical records	4 (14)
Smoking status (N=193)	Non-smoker	100 (52)
	Smoker	39 (20)
	Ex-smoker (stopped over 12 months ago)	42 (22)
	Ex-smoker (stopped during past 12 months)	5 (3)
	Not known from records	7 (4)
Excluding current smokers (N=154), exposure to second-hand smoke	At home	15 (10)
	At work	1 (1)
Location of death	Home (private address)	80 (41)
	Nursing/residential home	5 (3)
	Hospital, pre-hospital arrest	45 (23)
	Hospital, arrest in hospital	59 (30)
	Holiday	4 (2)
	Other	2 (1)
The person died before seeking medical assistance or before medical assistance was provided		87 (45)

[a]These data were either provided by a combination of responses from the GP or by extraction from GP records by an experienced respiratory clinician. Denominators for the percentages were 195 unless otherwise stated

An Asthma + Lung UK survey found 90% of people with lung conditions had made changes such as eating less or reducing inhaler use to cope with rising costs (Sep 2022)

What's the problem with asthma care?

- Asthma is the **3rd most prevalent condition** in SEL but there is **under-diagnosis** (4.9% prevalence SEL compared to 6.4% nationally)
- Asthma is a disease of **health inequalities** – there are higher rates in Black and Asian families, those living in deprivation and those living close to major roads (due to air pollution)
- In SEL we have a **higher than national average rate of hospital admissions** for young people with asthma
- There are **>20 asthma deaths a year** in SEL
- Asthma deaths are largely attributable to **avoidable factors**, and often occur before hospital admission
- **PRN SABA alone** is no longer recommended in the UK
- Compliance is **low** with regular ICS, but required to treat inflammation and reduce exacerbation (strong evidence)

The Clinical Emergency

- Inhaled **SABA** has been first-line treatment for asthma for more than 50 years
- Regular use of SABA, even for 1–2 weeks, is associated with increased airway hyper-responsiveness, reduced bronchodilator effect, increased allergic response, increased eosinophils *(e.g. Hancox, 2000; Aldridge, 2000)*
  - Can lead to a vicious cycle encouraging overuse
  - Over-use of SABA associated with ↑ **exacerbations and** ↑ **mortality** *(e.g. Suissa 1994, Nwaru 2020)*

EDITORIAL
GINA 2019

GINA 2019: a fundamental change in asthma management

Treatment of asthma with short-acting bronchodilators alone is no longer recommended for adults and adolescents

Helen K. Reddel[1], J. Mark FitzGerald[2], Eric D. Bateman[3], Leonard B. Bacharier[4], Allan Becker[5], Guy Brusselle[6], Roland Buhl[7], Alvaro A. Cruz[8], Louise Fleming[9], Hiromasa Inoue[10], Fanny Wai-san Ko[11], Jerry A. Krishnan[12], Mark L. Levy[13], Jiangtao Lin[14], Søren E. Pedersen[15], Aziz Sheikh[16], Arzu Yorgancioglu[17] and Louis-Philippe Boulet[18]

- Starting treatment with SABA trains the patient to regard it as their primary asthma treatment
- The only previous option was daily ICS even when no symptoms, but **adherence is very poor**
- GINA changed its recommendation once **evidence for a safe and effective alternative** was available

Big changes to guidance take time to filter through to front line clinicians and patients. Support and information on the evidence base is needed.

The Climate Emergency

South East London Integrated Care System

NHS South East London

Towards net zero: asthma care

BMJ 2023 ; 381 doi: https://doi.org/10.1136/bmj-2022-072328 (Published 19 June 2023)
Cite this as: *BMJ* 2023;381:e072328

thebmj

- Patients with Respiratory disease are particularly vulnerable to the effects of climate change
- pMDI inhalers contain hydrofluorocarbons (HFCs) as the propellant which are powerful greenhouse gases
- Inhalers account for 13% of the emissions under the direct control of the NHS, 3% of the total NHS carbon footprint
- SABA inhalers contribute 67% of England's inhaler carbon footprint
- 70% of all inhalers issued in England are pMDIs, compared to 13% in Sweden
- Within England there is also unwarranted variation eg 37% of inhalers in North Tyneside are pMDIs compared to 70% in North East Lincolnshire

What you need to know

- Hydrofluorocarbon propellants used in pressurised metered dose inhalers (pMDIs) disproportionately contribute to healthcare's environmental impact
- Reduced use of pMDIs improves planetary outcomes as well as clinical outcomes for patients
- Whenever clinically appropriate, consider low carbon inhalers (dry powder or soft mist) rather than high carbon pMDIs
- Seek opportunities to review asthma care at every consultation

Table 1 Carbon footprint by inhaler type (according to PresQIPP inhaler carbon footprint comparison tool[11])

Inhaler type	Indicative annual carbon footprint	
	Carbon dioxide equivalent (kg CO_2e)	Equivalent km driven in a mid-size petrol car
All dry powder inhalers and soft mist inhalers	1-24	5-130
Pressurised metered dose inhalers (pMDIs):		
Containing HFA134a (most pMDIs)	7-240	38-1209
Containing HFA 227ea (Flutiform and Symbicort MDI*)	429-835	2323-4521

* Only Symbicort MDI contains HFA227ea. Symbicort Turbohaler is a dry powder inhaler.

The sustainability agenda and inhaled therapy: what do patients want?

Grainne D'Ancona, Andrew Cumella, Charlotte Renwick, Samantha Walker

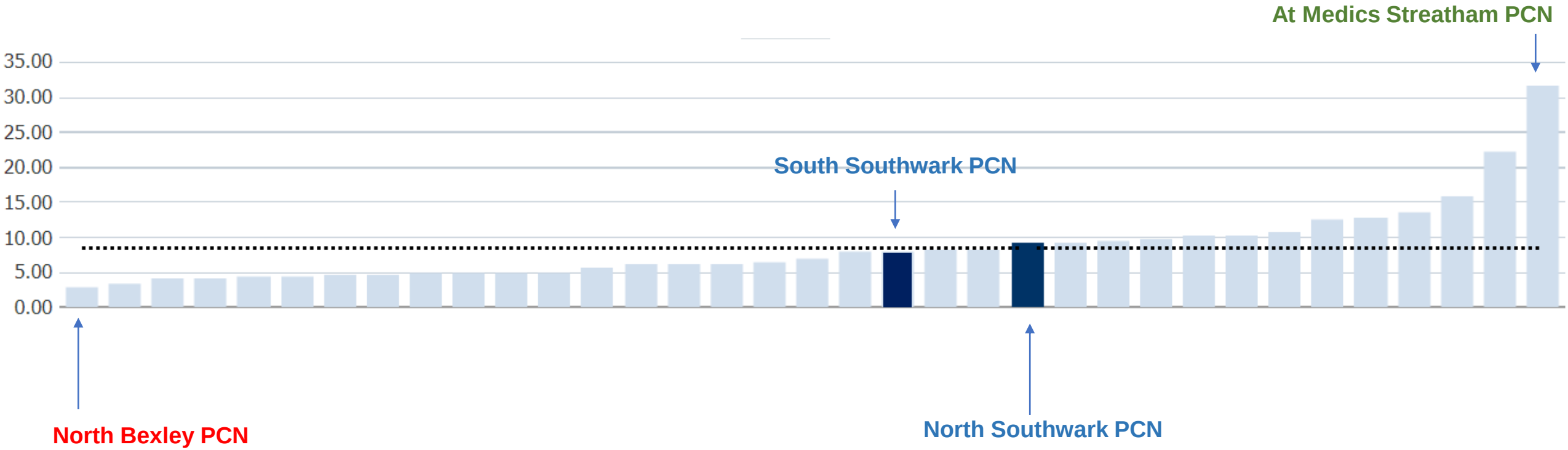
European Respiratory Journal 2021 58: PA3399; DOI: 10.1183/13993003.congress-2021.PA3399

Table 1. Answers to Survey Sustainability Questions

Question	Yes (n, %)	No (n, %)	Don't know (n, %)
1. Have you heard about the impact on the environment of metered dose inhalers (MDI)?	4,204 (35%)	7,864 (65%)	NA
2. If you were offered the choice, would you consider switching to a dry powder inhaler (DPI) for environmental reasons? (only asked to those receiving a MDI)	5,769 (60%)	1,850 (19%)	2,046 (21%)
3. Do you agree that people should be encouraged to switch to a more environmentally friendly inhaler?	10,184 (85%)	1,858 (15%)	NA
4. If you were to switch your inhaler, what would be most important to you? (only asked of those who would consider a switch)		**Number**	**Percentage**
That it works		4,592	80%
That I/my child know how to use it		3,416	59%
That my/child's asthma management routine is not affected		3,106	54%
That it is easy to use		2,675	46%
That I/my child can switch back if I don't like using the new inhaler		2,593	45%
That the environmental impact of the inhaler is lower		2,436	42%
People that I/my child know also use the inhaler		181	3%
Other		36	1%

*"In a large survey of UK asthma patients, we found many people with asthma were **unaware of the carbon footprint of their inhalers**, but most would be **willing to try a more environmentally friendly device**."*

Southwark Data



Prescribing of low carbon SABA inhalers as a proportion of all SABA inhaler prescribing at Jul-23

Southwark Data

Prescribing of low carbon preventer inhalers as a proportion of all preventer inhaler prescribing at Jul-23

The foundations of great asthma care

- Accurate diagnosis
- Care of co-morbidities
- Empowered patients
- Knowledgeable clinicians
- Regular assessment & optimisation of inhaler technique
- Equitable access to best care
- Clear pathways for escalation & specialist referral

What is AIR and who is it for?

AIR = **A**nti **I**nflammatory **R**eliever therapy (also known as SABA-free pathway)

- ✓ Step 1 – 1 x low dose ICS-formoterol inhaler used as reliever as required:
  Symbicort® Turbohaler® (licensed) and Fostair ® MDI (off-label for this indication)
- ✓Step 2 – low dose ICS-formoterol as maintenance + PRN (also known as MART)
  i. Poorly controlled asthma after step 1
  ii. Low ICS compliance
- ✓ Rescue/as needed SABA in addition to regular preventer treatment as stepping up and down is no longer required (remove for repeat medicines)
- ✓ Formoterol – rapid acting and long-acting bronchodilator
- ✓ Low dose ICS and improve ICS adherence
- ✓ Estimated 50% of new mild asthma diagnoses using AIR strategy

Evidence Review

AIR = Anti Inflammatory Reliever therapy

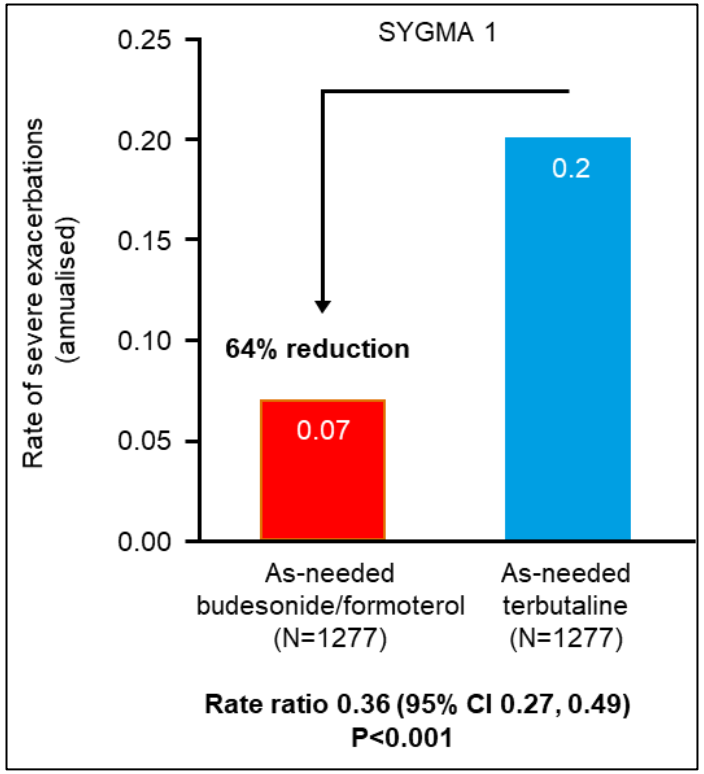
- 1 x ICS-formoterol inhaler used as required, no SABA

Compared with as needed SABA

- Risk of severe exacerbations reduced by 60–64%

Compared with maintenance low dose ICS

- Risk of severe exacerbations similar or lower
- In 2 large trials outcomes were independent of baseline features including blood eosinophils, FeNO, lung function, and exacerbation history
- Average ICS dose was ~50–100mcg budesonide/day



Meta-analysis of all four RCTs, n=9,565

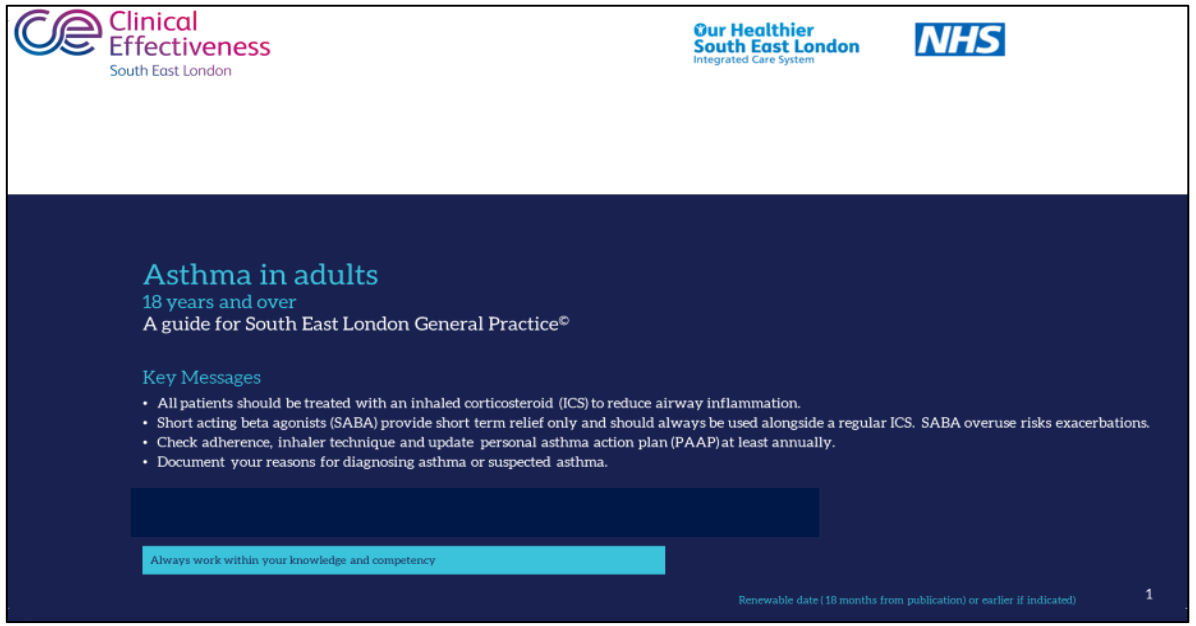
(Crossingham, Cochrane 2021)

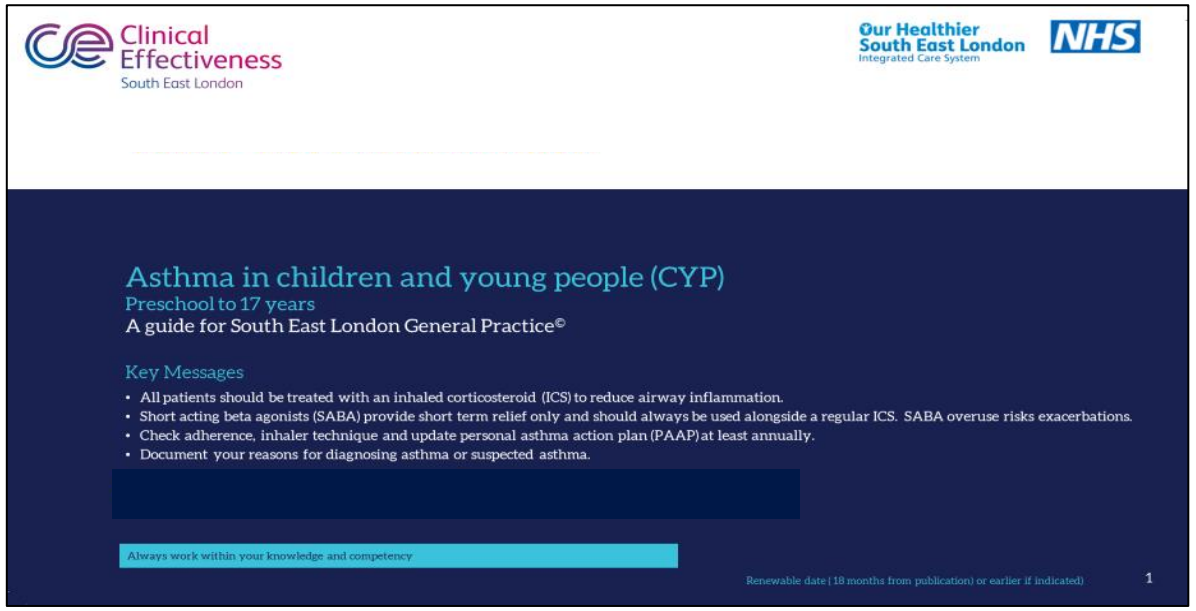
- 55% reduction in severe exacerbations compared with SABA alone
- Similar risk of severe exacerbations as with daily ICS + as needed SABA
- ED visits or hospitalizations 65% lower than with SABA alone, 37% lower than with daily ICS
- Resulting 30-105 few admissions per annum by 2028/29

What we hope you will take home today:

- The importance of **not** prescribing SABA alone
- The **new** SABA-Free pathway that reduces exacerbation risk
- How to support **sustainable** asthma care

With thanks to: Sian Howell, Cheryl Leung, Irem Patel, Maeve Savage, LJ Smith and the whole of the CESEL and SEL RRP teams





Approved and on the CESEL website

NHS
South East London

- Developed in SEL, for SEL
- A one stop guide for busy primary care teams
- Evidence–based with local pathways
- Available on CESEL webpage
  - Google CESEL or use the QR Code

Key Messages

Key Messages

- All patients should be treated with an inhaled corticosteroid (ICS) to reduce airway inflammation.
- Short acting beta agonists (SABA) provide short term relief only and should always be used alongside a regular ICS. SABA overuse risks exacerbations.
- Check adherence, inhaler technique and update personal asthma action plan (PAAP) at least annually.
- Document your reasons for diagnosing asthma or suspected asthma.

Asthma diagnosis[9,10]

There is not a single, definitive test for asthma. Asthma diagnosis should be made based on history and ideally supported by objective tests. There is variable availability of objective tests across SEL, See here for local referral pathways.

6/6 features = high probability of asthma

1-5/6 features = intermediate probability of asthma

Features to support asthma diagnosis

1	2	3	4	5	6
Recurrent episodes of cough, wheeze, chest tightness and shortness of breath.	Symptom variation e.g. throughout the day and between seasons.	Absence of symptoms suggestive of an alternative diagnosis (exclude red flags).	Recorded clinical observation of wheeze. Opportunistically check and record this whenever possible.	Personal/family history of atopy +/- raised eosinophils as indicator of atopy.	Positive peak expiratory flow rate (PEFR) monitoring or FEV1 variance. See here

Features may occur over time, and so recording each one when they occur in patient notes is important.

Presence of ≥ 1 feature to support asthma diagnosis?

NO → Consider alternative diagnosis

YES

Objective tests available and patient suitable?

NO → **PEFR monitoring and trial with ICS**

Undertake PEFR monitoring and if positive a trial with ICS over 6-8 weeks assessed using the Asthma Control Test™ and ideally FEV1 and/or serial PEFR

DO NOT DELAY TREATMENT IF YOU HAVE A HIGH CLINICAL SUSPICION OF ASTHMA AND OBJECTIVE TESTS ARE NOT AVAILABLE OR THERE IS A DELAY IN ACCESS.

YES

Asthma diagnosis supported by objective tests

Quality Assured Spirometry
Fractional exhaled nitric oxide (FeNO)
Bronchodilator reversibility
Peak Expiratory Flow Rate (PEFR) monitoring
Direct Bronchial Challenge Test

- **Objective tests indicate a positive diagnosis** → ASTHMA
- **Objective tests indicate an uncertain diagnosis** → SUSPECTED ASTHMA

Positive result

Asthma diagnosis in the absence of objective tests

Asthma diagnosis is a clinical decision based on high asthma probability and positive outcome of trial with ICS.

Clinical decision → ASTHMA

Negative or uncertain result

Uncertain?

Only a few features to support diagnosis of asthma?
Negative or uncertain response to ICS trial?
Undertake an ICS trial and then withdrawal of treatment.
If symptoms resolve with treatment and then return when treatment is withdrawn asthma is more likely. Natural resolution of symptoms is more common in CYP than adults.

The benefits of a confirmed asthma diagnosis may outweigh the risks of uncertainty of suspected asthma for patients and their carers.

Clinical decision → SUSPECTED ASTHMA

ASTHMA

Confirm asthma or suspected diagnosis with patient. Ensure understanding. Code diagnosis using Ardens template. Record basis on which diagnosis has been made.
Agree on a management/asthma action plan with patient and review date.

SUSPECTED ASTHMA

Offer the same level of care for suspected asthma confirmed asthma, with appropriate treatment and at least annual review. Consider objective tests again or when available, especially if symptomatic.

POOR RESPONSE TO TREATMENT OR ATYPICAL FEATURES?

Check adherence and inhaler technique, review diagnosis, and consider referral

Objective tests for asthma[11, 12, 13]

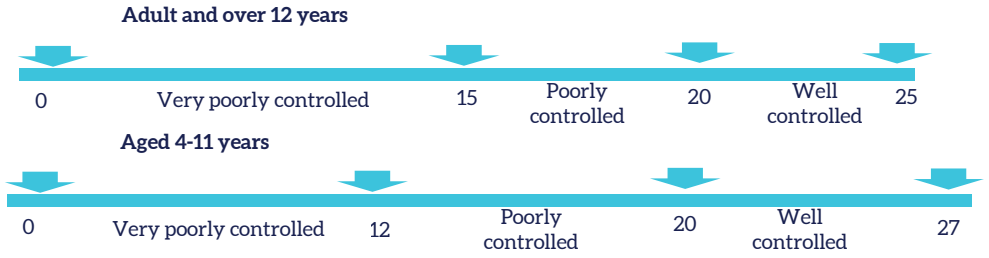
Objective test: Use links for patient information	Peak Expiratory Flow Rate (PEFR) monitoring	Quality Assured Spirometry*Z	Bronchodilator reversibility (BDR) $\beta_2$agonist or corticosteroid	Fractional exhaled nitric oxide (FeNO)	Direct bronchial challenge test (DBC)
What does it test?	Reversibility	Obstruction	Reversibility	Inflammation	Reversibility
Where is it done?	Can be offered by GP teams	Offered by community respiratory hub or secondary care Spirometry should only be done by those on National Register of Certified Professionals and Operators (ARTP Spirometry)			Only for adults and in specialist setting
Positive threshold for diagnosis	Variability> 20%	FEV1/FVC ratio <70% or below the lower limit of normal FEV1 increase ≥200mls or >12%		Adults ≥40ppb	
Notes	Each reading best of 3 hard and fast blows. Twice daily or more for at least 2 weeks Use charts and check patients can plot correctly, available from: Asthma and Lung UK. Watch this short video for help calculating PEFR variability	Take all inhalers to test. Before tests stop SABA for 4-6 hours, LABA for 36 hours, LAMA 36-48 hours, continue ICS. Before test avoid smoking for 24 hours, large meal or exercise. Wear loose clothing **Normal spirometry does not exclude asthma** Spirometry is less reliable at age extremes Spirometry and BDR usually offered together More details including contraindications Patient info; Spirometry - NHS (www.nhs.uk)		Results may be affected by steroid use, smoking, URTI and allergen exposure. NHSE patient FeNO information	

Both symptoms and objective tests have significant false positive and false negative rates. Tests are more likely to be positive when a patient is symptomatic.
Ideally objective test for asthma should be done before ICS treatment is started as this may impact on results, but do not delay treatment in symptomatic patients if objective tests are not available or there is a long wait.

For detailed NICE diagnostic summary click here

ASTHMA CONTROL TEST

ACT™ takes time, and can be done ahead of appointments via text, email or filling in a paper questionnaire which can be obtained on the GSK supported website



WHICH TEST?

Ideally all asthma diagnosis should be supported by positive spirometry with BDR +/- positive FeNO.
DBC can be used in adults where there is diagnostic uncertainty
Asthma initial diagnosis and QOF: AST011 coding

New diagnoses or newly registered from April 2023 require **quality-assured spirometry** PLUS either **FeNO** or **Peak expiratory variability** or **bronchodilator reversibility,** 3/12 before or 6/12 after diagnosis

If QA spirometry and/or FeNO is not available, the following codes can be used:
QOF (Quality and Outcomes Framework) diagnostic spirometry service not available
QOF (Quality and Outcomes Framework) - FeNO (fractional exhaled nitric oxide) test service not available
Ardens template supports accurate coding

Self-care

Education

Understanding asthma and how the treatment works is an important aspect of care (see here for patient resources).

Personalised asthma action plans (PAAP)

PAAPs should be collaboratively agreed, regularly updated and include daily management and when and where to seek advice.
PAAP can be uploaded into Digital Health Passport – Digital Health Passport.

Smoking, passive smoking and e-cigarettes/vaping

Offer tobacco dependence advice and treatment for those with asthma, including asking about vaping.

Adherence and technique

Nonadherence plays a large role in poorly controlled asthma and exacerbations. Review adherence by asking and checking inhaler prescriptions ordered and support good technique with education and resources.

Exercise

Exercise is good for asthma. Ensure good asthma control to benefit from regular exercise.

> 'Asthma is not just an acute condition that only needs treating when it's bad. It's a long-term chronic condition that need to be treated even when it's ok and patients feel good.'
> Nurse specialist, south London

Comorbidities

Obesity

Weight management support for overweight patients can contribute to good asthma control.

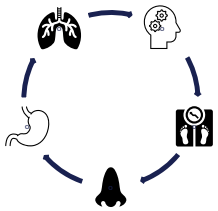
Atopic conditions

Hay fever and rhinitis: Use low steroid nasal spray and ensure correct technique. Optimise eczema care.

Disordered breathing and sleep apnoea

Acid reflux and heartburn

Managing co-morbidities is an important aspect of asthma care.



Depression and anxiety

Adverse asthma outcomes are associated with depression and panic disorder. Always ask, consider treatment and signpost to support.

COPD

COPD may overlap with asthma and is best managed with specialist input.

Access to healthcare

General Practice regular review

Patients who are reviewed regularly have a lower risk of asthma attack. Patients should be reviewed in general practice at least annually, after dose changes and exacerbations.

Continuity

Continuity within a practice team helps build relationships and trust and improve asthma care.

Vaccination

Offer flu vaccination annually, pneumococcal + other vaccinations as required e.g. COVID.

Emergency care

Asthma plans should include details of when and where to access urgent care.
Review in general practice or with community asthma team within 48 hours an A&E visit or hospital discharge.

Specialist care

Specialist referral is indicated when

- > 2 attacks/year
- asthma is not controlled despite treatment
- asthma is worse at work
- asthma **and** COPD overlap

Environment

Outdoor Pollution

People with asthma should try to avoid busy roads and vigorous outdoor exercise on high pollutions days..

Asthma control

Well controlled asthma has the lowest carbon imprint.

Indoor pollution

Electricity is the cleanest home energy source.
Damp and mould issues, burning wood, candles and incense adversely affect asthma.
'Chemical free' or 'allergy friendly' household and personal products limit asthma triggers.

Triggers

Triggers include pollen, cigarettes, emotion, weather changes and pets. Recognising and mitigating triggers will reduce risk of attacks and improve control.

Inhalers

Using inhalers as prescribed and with the correct technique reduces waste, improves control and reduces need for unplanned medical care.
Non-propellant (NP) inhalers such as DPIs, have a lower carbon footprint and can be used effectively by most people. They require a greater respiratory effort than pMDIs so may not be suitable for all patient groups, e.g. neurodiverse patients. Aim for an inhaler the patient can and will use.
Used inhalers should be returned to the pharmacy to be recycled or environmentally friendly disposal.
SEL support for prescribing sustainably

Occupational asthma

If symptoms are worse at work involve specialist review

Asthma and suspected asthma review [13, 14, 15]

A general practice asthma review should be offered at least once a year (QOF), after dose changes and within 48 hours of a hospital attendance or admission.

For abbreviations see here

Asthma reviews should be undertaken by a clinician with expertise in asthma care.

Review planning at practice/PCN level	**Call/recall planning:** include all patients coded for asthma or suspected asthma. Review notes of patients prescribed inhalers without a diagnosis of asthma or COPD as this may be uncoded asthma. **Consultations type:** telephone consultations are helpful for low-risk patients and those who find it difficult to attend the practice. Face-to-face contacts better suit a personalised care approach, allow for checking and demonstrating inhaler technique and are more suitable for patients with poor control and/or complex needs, when changing treatment and after exacerbations. Patients value being offered a range of appointment types and times, including outside of work hours.	Contact CESEL team for advice and information on searches and quality improvement support
Pre-patient review	For QOF purposes the ACT™ and exacerbation recording can be done up to one month before the review. Ask patients to bring all inhalers and spacer devices to their review appointment.	Text/email /AccurxFlorey /ACT™
Aims of the review	• **To improve quality of life:** NO daytime symptoms or limitations on activity, NO disturbed sleep, MINIMAL side effects from medication. • **To minimize the risk of exacerbations**: optimal control, recognizing and mitigating triggers, recognizing and managing exacerbations and referring those at high risk.	
1. ASSESS CONTROL AND SEVERITY		Use Ardens asthma template to ensure correct coding. **Consider creating/using EMIS proformas** to add to asthma review to ensure information given and recorded e.g. **1 – ICS – patient informed** - ICS treats underlying airway inflammation as opposed to the blue inhaler only rescue/short-term opens the airways ·ICS takes 4-8 weeks to start working, up to 12 weeks for full effect. -Overuse of SABA and its effects discussed e.g. increases risk of exacerbations, fixed airways disease. -If, after 4-6 weeks of using the preventer inhaler, still symptomatic/waking at night/using the blue inhaler 3x per week this is a sign of poor asthma control and increased risk of an asthma attack and needs review **2 – Spacers – patient informed** -Importance of spacer for drug delivery to the airways -SMS sent with link to video on correct spacer technique. -Discussed spacer care and replacement. -If hears spacer whistle when breathing in is breathing in too fast and needs to breathe more slowly so no whistle is heard. -Leave 30-60s between each puff. -Rince mouth after ICS **To create EMIS hashtag proformas**: (video here) Go to 'CR configuration' on the tap at the top → click on 'Quick codes and test' under 'Organisation Options' (top left) → click 'Add' → Give the item a name → type in the text above e.g. #asthmareview Asthma and Lung UK Training Videos Encourage your patients to use Digital Health Passport – Digital Health Passport
Control test (QOF)	Review and record the validated ACT™ result with patient to help inform management.	
Inhaler ratio	Review how many inhalers have been ordered and ask how many have been used. If fewer than 4 ICS (suboptimal adherence) or ICS./LABA inhalers, or more than 3-6 SABA (SABA over reliance) in a 12-month period – this suggests poor adherence or control. Use the Asthma Slide Rule or the Reliever Reliance Test to support a conversations for patients who may be over reliant on their SABA inhaler.	
Exacerbations: reduce risk (QOF)	Optimise disease control, avoid triggers, appropriate management of exacerbations and identifying and referring those at high risk into specialist care, to available specialist services within your borough.	
PEFR	Review PEFR measurements if available. Record PEFR, document best PEFR in include in notes and action plan (PAAP). Record height and weight to support calculating the predicted peak flow rate.	
2. REVIEW		
Diagnosis	Ensure the reason for asthma or suspected asthma diagnosis is recorded in the notes. If any uncertainty revisit diagnostic page and refer for objective tests as appropriate/where available.	
Understanding	Check patient's understanding of what asthma is and how it is treated.	
Inhaler technique (QOF)	Suboptimal inhaler technique is linked to poorer asthma outcomes. Check inhaler and spacer technique at every review and reinforce correct technique, offer inhaler specific training videos. If a spacer is being used, reinforce the benefits for drug delivery, importance of technique, spacer care and when to replace. More information on page. 10.	
Adherence	Poor ICS adherence may explain poor control. (Complete the adherence training module Modifying non-adherence to medicines in asthma - Pulse 365 (Pulse registration needed)	
Smoking status (QOF)	Offer tobacco dependance support for patients and carers. NCSCT Very Brief Advice training module. Smokers may need higher dose ICS due to impact of smoking on ICS efficacy.	
Triggers	Identify triggers, including indoor triggers such as mould, and consider ways to reduce and mitigate exposure. Consider a housing letter or referral to Social Prescribing Link Worker for support. If asthma is worse at work, refer to secondary care for suspected occupational asthma.	
Co-morbidities	Identify and manage co-morbidities. This includes exploring low mood and anxiety and signposting to support, and optimising hay fever treatment.	
Medication	If asthma is poorly controlled despite good ICS adherence and technique, consider a step up their management. If stable for 3 or more months and low risk of exacerbations, consider a step down in treatment. Give your patients the option of switching to a lower carbon inhaler where appropriate. Check and address any SABA over reliance. Provide written material and signpost to training videos. Update asthma medication review in notes. Check patients know how to use the NHS App to order repeat prescriptions.	
Vaccination	Review vaccination status and offer flu, pneumococcal and COVID vaccinations as appropriate	
3. COLLABORATE: Explore ideas, concerns and expectations, share relevant information, discuss risks and benefits of treatment and importance of self-management..		
PAAP (QOF)	Co-create a personalised asthma management plan in collaboration with the patient to support self-management. Update annually. Use the link in the Ardens template or here.	
Goals	Review previous goals and consider new goals e.g. weight loss, reduce SABA use	

Follow up: At least annually and 4-6 weeks after any medication changes. More frequent follow ups may be necessary for patients with poor disease control or those with severe asthma.
There is lots of information to share in an asthma review and shorter and more frequent appointments may reduce the risk of information overload. Consider group consultations.

Managing asthma in adults [16,17], local practice

For abbreviations see here

18 years +

1 Choose between propellant and non-propellant inhalers

Non-propellant inhaler DPI/SMI
Dry Powder inhaler (DPI) and Soft Mist inhaler (SMI)
OR

DPI/SMI have a lower carbon footprint than propellant based, pressured metered dose inhalers (pMDI),
If using DPI prescribe pMDI SABA + spacer device for emergency use.

Propellant inhalers pMDI
Pressurised metered – dose inhaler

pMDI –must be used with a spacer device.
Use the inhaler links on this page to find the right spacer for each device.

2 Choose between SABA-Free and SABA Pathways

SABA-Free Pathway
For Step 1 and 2
NEW
PREFERRED

Using a combination ICS + rapid-release LABA (formoterol) inhaler instead of separate ICS and SABA inhalers reduces the risk of exacerbations and SABA overuse[6].
Step 1: start with AIR (As Needed **A**nti-**I**nflammatory **R**eliver therapy) and progress to MART (**M**aintenance and **R**eliever **T**herapy) – with rescue ICS/rapid action LABA (formoterol) inhaler as required.
SABA-Free can only be for step 1 and 2, if moving to Step 3, consider specialist input and move to SABA pathway as rescue/as required ICS/LABA use exceeds recommended ICS dose at Step 3 and 4.

OR

SABA Pathway
Traditional

Separate ICS and SABA inhalers. Risks SABA overuse.
There is a wider choice of ICS/LABA inhalers in this pathway as it is not restricted to rapid acting LABA – (formoterol) inhalers.

3 Choose step: starting at Step 1

Step up if symptoms are not controlled despite good adherence and technique.

Step down if symptoms well controlled and not at risk of exacerbations.

Review 6-8 weeks after a change.

4 Choose inhaler

Some steps offer a range of inhalers. Support patient choice using the table on P. 11

Improving symptoms ← Review and correct inhaler technique and confirm adherence to treatment before considering a step up in treatment. Consider step down once good asthma control has been maintained for 3 months → Worsening symptoms

Continue specialist-initiated management plans which may differ from this guide

New joint guidance from NICE/BTS/SIGN is due in 2024. Watch this space

Support for prescribing off license

Medium or high dose steroid? Issue steroid card SEL Guidance PIL

SABA-FREE PATHWAY: PREFERRED

Step 1: Low dose ICS + bronchodilator

AIR	DPI	Symbicort Turbohaler 200/6 1 puff as needed No regular inhaler	
	pMDI	Fostair pMDI 100/6 1 puffs as needed No regular inhaler (off license indication)	
MART	DPI	Symbicort Turbohaler 100/6 1-2 puffs BD **and** as needed	
		Symbicort Turbohaler 200/6 1 puff BD **and** as needed	
		Fostair Nexthaler 100/6 1 puffs BD **and** as needed	
	pMDI	Fostair pMDI 100/6 1 puffs BD **and** as needed (off license indication)	

Step 2: Moderate dose ICS/LABA

DPI	pMDI
Fostair Nexthaler 100/6 2 puffs BD **and** 1 as needed	Fostair pMDI 100/6 2 puffs BD **and** 1 as needed (off license indication)
Symbicort Turbohaler 200/6 2 puffs BD **and** 1 as needed	

Rescue/as needed low dose ICS/LABA in addition to regular preventer treatment as stepping up and down:
Maximum doses : **Symbicort Turbohaler** (200/6) 6 puffs on a single occasion, 12 puffs daily for short periods only, **Fostair pMDI** and **Nexthaler** max 8 puffs/day

SABA PATHWAY

Regular ICS	DPI	Easyhaler Beclometasone 200 1 puffs BD	
		Pulmicort 200 turbohaler 1 puff BD	
	pMDI	QVAR 100 1 puff BD	
		Clenil 100 2 puffs BD	
As needed SABA	DPI	Ventolin 200 Accuhaler as needed	
		Bricanyl 500 Turbohaler as needed	
		Salbutamol Easyhaler as needed	
	pMDI	Salamol pMDI 100 as needed	
		Airomir pMDI 100 as needed	

DPI	pMDI
SABA-free choices above or	Fostair pMDI 100/6 2 puffs BD
Atectura Breezhaler 125/127.5 1 capsule OD	
Relvar Ellipta 92/22 1 puff OD	

Rescue/as needed SABA in addition to regular preventer treatment as stepping up and down:, Ventolin Accuhaler,, Bricanyl Turbohaler, Salamol pMDI, Airomir pMDI, Salbutamol Easyhaler ,

Before stepping up to Step 3 and 4: Seek advice from asthma specialist GP, pharmacist or nurse, or referral to integrated/community or secondary care team .
Up to date eosinophil count and FeNO, if available, will help specialist management decisions

Step 3: High dose ICS/LABA or Moderate dose ICS/LABA/LAMA

SEEK ADVICE before stepping up to Step 3&4

DPI/SMI	pMDI
High dose ICS/LABA	
Fostair Nexthaler 200/6 2 puffs BD	Fostair pMDI 200/6 2 puffs BD
Relvar Ellipta 184/22 1 puff OD	
Atectura Breezhaler 125/260 1 capsule OD	
Moderate dose ICS/LABA/LAMA	
Trimbow Nexthaler 88/5/9 2 puffs BD (off license indication)	Trimbow pMDI 87/5/9 2 puffs BD
Symbicort Turbohaler 200/6 2 puffs BD **PLUS** Spiriva Respimat SMI 2 puffs OD	

Step 4: High dose ICS/LAMA/LABA

SEEK ADVICE before stepping up to Step 3 &4

DPI/SMI	pMDI
Fostair Nexthaler 200/6 2 puffs BD **PLUS** Spiriva Respimat 2 puffs OD	Trimbow pMDI 172/5/9 2 puffs BD (link to electronic medicines compendium)
Enerzair Breezhaler 114/46/136 1 capsule OD	
Relvar Ellipta 184/22 1 puff OD **PLUS** Spiriva Respimat SMI 2 puffs OD	

Suggested inhalers for adults [16,17]

Training videos: click on the title links

For abbreviations see here

Non-propellant inhalers

Propellant containing metered dose inhalers

How to use an pMDI

SABA
Short acting beta agonist
RESCUE Treatment

Bricanyl Turbohaler 500

Terbutaline 500 micrograms/dose

Ventolin Accuhaler

Salbutamol 200micrograms/dose

Salbutamol Easyhaler

Salbutamol 100 micrograms/dose

Salamol pMDI

Salbutamol 100 micrograms/dose

Airomir pMDI

Salbutamol 100 micrograms/dose

ICS
Inhaled corticosteroid

Beclometasone 200 Easyhaler

Beclometasone 200micrgrams/dose

Pulmicort 100 Turbohaler

Budesonide 100 micrograms/dose

Clenil Modulite 100 pMDI

Beclomethasone 100 micrograms/dose

QVAR pMDI

Beclometasone 100micrograms/dose

ICS/LABA
Combined ICS + long-acting beta agonist

Rapid-release LABA (formoterol)

Symbicort 200/6 Turbohaler

Budesonide 200micrograms/dose
Formoterol 6 micrograms/dose

Fostair Nexthaler 100/6

Beclometasone 100micrograms/dose
Formoterol 6micrograms/dose

Fostair Nexthaler 200/6

Beclometasone 200micrograms/dose
Formoterol 6micrograms/dose

Atectura Breezhaler 125/127.5

Indacaterol 125micrograms/dose
Mometasone 127.5micrograms/dose

NOT rapid-release LABA

Atectura Breezhaler 125/260

Indacaterol 125micrograms/dose
Mometasone 260 micrograms/dose

Relvar Ellipta

Fluticasone furoate 92 micrograms/dose
Vilanterol 22micrograms/dose

Rapid-release LABA (formoterol

Fostair 100/6 pMDI

Beclometasone 100micrograms/dose
Formoterol 6micrograms/dose

Fostair 200/6 pMDI

Beclometasone 200micrograms/dose
Formoterol 6micrograms/dose

ICS/LABA/LAMA
Combined ICS/LABA + long acting muscarinic antagonist

Trimbow Nexthaler 88/5/9

Beclometasone 88micrograms / dose
Formoterol 5micrograms / dose
Glycopyrronium 9micrograms / dose

Enerzair Breezhaler 114/46/136

Indacaterol 114micrograms/dose
Glycopyrronium 46micrograms/dose
Mometasone 136micrograms/dose

Trimbow pMDI 87/5/9
Beclometasone 87micrograms / dose Formoterol 5micrograms / dose Glycopyrronium 9micrograms / dose

Trimbow pMDI 172/5/9
Beclometasone 87micrograms / dose
Formoterol 5micrograms / dose
Glycopyrronium 9micrograms / dose

LAMA
long acting muscarinic antagonist

Spiriva Respimat

Tiotropium bromide 2.5 micrograms/dose

SPACERS with pMDI

All pMDIs must be used with compatible spacer device.
Use Rightbreathe or links on the 'Inhaler and Spacers' page for compatible spacer devices for each inhaler.

Management of acute asthma in adults[9, 20]

Many asthma deaths are preventable. Treatment delays can be fatal. Patients with life-threatening acute asthma may not be distressed.
Include management of exacerbations and when to seek advice in all action plans. What to do in an asthma attack – patient resource.

Arrange follow up within 48 hours in general practice or with community asthma team for all patients who have been seen in an emergency setting for an asthma attack
Review should include:
- Check asthma is responding to treatment
- Continue prednisolone – 5-7 days
- Explore avoidable triggers
- Ensure correct treatment is prescribed – including ICS, adhered to and correct technique
- Update PAAP
- Code all asthma attacks managed in general practice and hospital settings using Ardens template Asthma Exacerbation page

Assess and record	Moderate acute	Severe acute	Life-threatening
Speak in sentences	Yes	No	No
SpO_2	SpO_2 ≥92%	SpO_2 ≥92%	<92%
PEFR best or predicted only use precited if best PEFR within last 2 years is unknown	>50-75%	33-55%	<33%
HR **Beats per minute**	HR < 110	HR ≥ 110	Silent chest, cyanosis, poor respiratory effort, arrhythmia, exhaustion, hypotension, confusion
RR/minute	RR < 25	RR ≥ 25	
Where to manage?	Manage at home or in primary care. Admit to hospital is life-threatening features, previous near fatal asthma, getting worse. Lower threshold if late in the day, previous severe attacks, concern re social circumstances	**Consider admission if no response to treatment** Stay with patient until ambulance arrives.	**Arrange immediate admission** Stay with patient until ambulance arrives.
Treatment: for patients using DPI for daily management prescribe a pMDI SABA+ spacer device for emergency use			
$ß_2$ BRONCHODILATOR: **SABA pathway** SABA pMDI via spacer – if no improvement via nebuliser	**Via spacer** = one puff at a time, inhaled separately using tidal breathing, one puff every 60 seconds, up to 10 puffs. **Via nebuliser** – salbutamol 5mg ideally oxygen drive	Via nebuliser, spacer if not available	With ipratropium via nebuliser – Salbutamol 5mg and ipratropium 0.5mg - via spacer if nebuliser not available
$ß_2$ BRONCHODILATOR: **SABA-free pathway** ICS/rapid–action LABA (formoterol) inhaler	ICS/LABA (formoterol):: one puff as needed up to a max 8 puffs in 24hrs – seek medical advice if using this much.. Can use up to 12 puffs in 24 hours as a temporary measure. If no relief after first puff, wait a few mins then take a 2nd puffs. Up to 6puffs at a time, if no relief after 6puffs, call 999. If on MART, continue with maintenance dose and can use up to 2 puffs four times a day to manage exacerbation.		
PREDNISOLONE Use plain, white prednisolone, this can be CRUSHED and DISSOLVED in water. Soluble prednisolone is expensive and confers no added benefit. Taken in the morning with or after food	40-50mg daily for 5-7 days	Prednisolone 40-50mg (or IV hydrocortisone 100mg)	Prednisolone 40-50mg (or IV hydrocortisone 100mg)
OXYGEN If available	To drive nebuliser if used	To maintain SpO_2 94-98%	To maintain SpO_2 94-98%

When to seek advice and/or refer?[21, 22]

In an emergency

Asthma action plans should include details of when to seek urgent help. See here for emergency management of asthma and when to call 999/refer to A&E

Worrying Symptoms/'Red Flags'[2]

Prominent systemic features
Unexpected clinical finding e.g. cardiac disease, clubbing
Persistent, non-variable breathlessness
Chronic sputum production
Unexplained restrictive spirometry
CXR changes
Marked eosinophilia

Patient under specialist care

Patients with asthma under specialist care including those receiving biologics, should receive the same level and access to general practice care as all patients with asthma or suspected asthma – this includes an annual review. Do not reduce or stop ICS without consulting specialist.

Patients on biologics are not immunocompromised and do not have additional monitoring requirements.. Inhaled medication dose change should only be made in consultation with specialist. More information

Communication between primary, secondary and community services is key to ensure patients receive consistent advice and support and have clear oversite of their care.

Complexity

Asthma and COPD overlap
Occupational asthma
Complex co-morbidity

Diagnostic uncertainty

Poor response to treatment or diagnostic uncertainty.

Uncontrolled asthma

It is important to distinguish between poorly controlled asthma and severe asthma.
Refer patient with asthma symptoms despite optimal treatment. Before referring check the following:

On high intensity treatment?
Are they at the high-end of treatment escalation according treatment algorithm?

Adherence?
Have you explored if taking meds as prescribed?
If fewer than 4 ICS or ICS./LABA inhalers, or more than 3- 6 SABA in a 12-month period – this suggests poor adherence or control.

Severe exacerbations?
Refer if ≥2 courses of PO steroids or admission in last year

Technique
Is their inhaler technique correct? Consider changing inhalers to best suit the patient.

Exclude other conditions
Are comorbidities being managed?

Psychosocial factors

Adverse asthma outcomes are associated with depression, anxiety, panic disorder and low socioeconomic status. Consider referring for support for patients or their primary carers to mental health workers, Talking therapy, Social Prescribing Link Worker, community support and to community asthma nurses.

For inhaler technique and medicines advice

Refer to community pharmacy team

If in doubt..

1. Discuss with a clinician with interest in respiratory within your primary care team or PCN, if there is one
2. Consider seeking specialist advice via Consultant Connect or Advice & Guidance
3. May need secondary care referral if the first 2 steps do not answer the clinical questions.

Bexley

Bromley

Greenwich

Lambeth

Lewisham

Southwark

Before referring to secondary care:

- Check **adherence** & inhaler **technique**
- Look at 'when to refer' page
- Ask – is there a clinician with interest in respiratory within your primary care team or PCN?
- Consider **Advice & Guidance** via eRS or **Consultant Connect**

Health warning:
Services are constantly changing.
Work is underway to improve provision of community respiratory hubs across SEL.
If you know of a new service, or a service listed is not correct, please let us know and we will update this information: clinicaleffectiveness@selondonics.nhs.uk

Services Offered	Objective Testing	Diagnostic & management support	Referral criteria	How to refer
Integrated Respiratory Team (IRT): Community Lung Function service:	Yes	No	16+ years New symptoms of asthma and/or COPD, or Old spirometry not meeting quality standards/results do not support current diagnosis	Complete IRT referral form (DXS) – select Community Lung Function Service. Refer via eRS → 'Diagnostic Physiological Measurement' → 'Respiratory – Full Lung Function' → 'Community Lung Function Service – (name of the location) Attach IRT referral form
Integrated Respiratory Team (IRT) Hospital Chest Clinic Kings College Hospital (KCH) & Guys and St Thomas' Hospital (GSTT)	No	Yes	Aged 16+ Please ensure patients have had diagnostic tests provided by the Community Lung Function (above) if indicated	Complete IRT referral form (DXS) Choose: Hospital Chest Clinic Service Refer via eRS → Asthma, Guy's site – Respiratory Medicine – Guy's & St Thomas' – RJ1 eRS → Chest, Guy's site – Respiratory Medicine – Guy's & St Thomas' – RJ1 Attach IRT referral form
Adult advice			16 years and over	If your enquiry is URGENT King's TALK service includes acute medicine: 020 3299 6613 Monday-Friday 8.30am – midnight, weekends 8.30am-8pm. GSTT GP Direct Line: 020 7188 4488

South East London Integrated Care System

NHS South East London

How can the asthma guidelines be applied to your patients?

Shamina

- 27 years
- Never smoked
- Persistent cough and wheeze for 3 months after a viral infection
- Worse at night
- No history of asthma
- History of hayfever and wheeze as a child
- What next?

Shamina

- Mentimeter question

- Get a CXR?
- Ask to do a PEFR diary?
- Refer for objective tests?

Asthma diagnosis[9,10]

There is not a single, definitive test for asthma. Asthma diagnosis should be made based on history and ideally supported by objective tests. There is variable availability of objective tests across SEL, See here for local referral pathways.

6/6 features = high probability of asthma

1-5/6 features = intermediate probability of asthma

Features to support asthma diagnosis

1	2	3	4	5	6
Recurrent episodes of cough, wheeze, chest tightness and shortness of breath.	Symptom variation e.g. throughout the day and between seasons.	Absence of symptoms suggestive of an alternative diagnosis (exclude red flags).	Recorded clinical observation of wheeze. Opportunistically check and record this whenever possible.	Personal/family history of atopy +/- raised eosinophils as indicator of atopy	Positive peak expiratory flow rate (PEFR) monitoring or FEV1 variance. See here

Features may occur over time, and so recording each one when they occur in patient notes is important.

Presence of ≥ 1 feature to support asthma diagnosis?

NO → Consider alternative diagnosis

YES

Objective tests available and patient suitable?

NO → **PEFR monitoring and trial with ICS**

Undertake PEFR monitoring and if positive a trial with ICS over 6-8 weeks assessed using the Asthma Control Test™ and ideally FEV1 and/or serial PEFR

DO NOT DELAY TREATMENT IF YOU HAVE A HIGH CLINICAL SUSPICION OF ASTHMA AND OBJECTIVE TESTS ARE NOT AVAILABLE OR THERE IS A DELAY IN ACCESS.

YES

Asthma diagnosis supported by objective tests

Quality Assured Spirometry
Fractional exhaled nitric oxide (FeNO)
Bronchodilator reversibility
Peak Expiratory Flow Rate (PEFR) monitoring
Direct Bronchial Challenge Test

- Objective tests indicate a positive diagnosis → ASTHMA
- Objective tests indicate an uncertain diagnosis → SUSPECTED ASTHMA

Positive result

Asthma diagnosis in the absence of objective tests

Asthma diagnosis is a clinical decision based on high asthma probability and positive outcome of trial with ICS.

Clinical decision → ASTHMA

Negative or uncertain result

Uncertain?

Only a few features to support diagnosis of asthma?
Negative or uncertain response to ICS trial?
Undertake an ICS trial and then withdrawal of treatment.
If symptoms resolve with treatment and then return when treatment is withdrawn asthma is more likely. Natural resolution of symptoms is more common in CYP than adults.

The benefits of a confirmed asthma diagnosis may outweigh the risks of uncertainty of suspected asthma for patients and their carers.

Clinical decision → SUSPECTED ASTHMA

ASTHMA

Confirm asthma or suspected diagnosis with patient. Ensure understanding. Code diagnosis using Ardens template. Record basis on which diagnosis has been made.
Agree on a management/asthma action plan with patient and review date.

SUSPECTED ASTHMA

Offer the same level of care for suspected asthma confirmed asthma, with appropriate treatment and at least annual review. Consider objective tests again or when available, especially if symptomatic.

POOR RESPONSE TO TREATMENT OR ATYPICAL FEATURES?

Check adherence and inhaler technique, review diagnosis, and consider referral

Asthma diagnosis[9,10]

There is not a single, definitive test for asthma. Asthma diagnosis should be made based on history and ideally supported by objective tests. There is variable availability of objective tests across SEL, See here for local referral pathways.

6/6 features = high probability of asthma

1-5/6 features = intermediate probability of asthma

Features to support asthma diagnosis

1	2	3	4	5	6
Recurrent episodes of cough, wheeze, chest tightness and shortness of breath.	Symptom variation e.g. throughout the day and between seasons.	Absence of symptoms suggestive of an alternative diagnosis (exclude red flags).	Recorded clinical observation of wheeze. Opportunistically check and record this whenever possible.	Personal/family history of atopy +/- raised eosinophils as indicator of atopy	Positive peak expiratory flow rate (PEFR) monitoring or FEV1 variance. See here

Features may occur over time, and so recording each one when they occur in patient notes is important.

Presence of ≥ 1 feature to support asthma diagnosis?

NO → Consider alternative diagnosis

YES

Objective tests available and patient suitable?

NO → **PEFR monitoring and trial with ICS**

Undertake PEFR monitoring and if positive a trial with ICS over 6-8 weeks assessed using the Asthma Control Test™ and ideally FEV1 and/or serial PEFR

DO NOT DELAY TREATMENT IF YOU HAVE A HIGH CLINICAL SUSPICION OF ASTHMA AND OBJECTIVE TESTS ARE NOT AVAILABLE OR THERE IS A DELAY IN ACCESS.

YES

Asthma diagnosis supported by objective tests

Quality Assured Spirometry
Fractional exhaled nitric oxide (FeNO)
Bronchodilator reversibility
Peak Expiratory Flow Rate (PEFR) monitoring
Direct Bronchial Challenge Test

- Objective tests indicate a positive diagnosis → ASTHMA
- Objective tests indicate an uncertain diagnosis → SUSPECTED ASTHMA

PEFR monitoring and trial with ICS

- Positive result → **Asthma diagnosis in the absence of objective tests**

Asthma diagnosis is a clinical decision based on high asthma probability and positive outcome of trial with ICS.

Clinical decision → ASTHMA

- Negative or uncertain result → **Uncertain?**

Only a few features to support diagnosis of asthma?
Negative or uncertain response to ICS trial?
Undertake an ICS trial and then withdrawal of treatment.
If symptoms resolve with treatment and then return when treatment is withdrawn asthma is more likely. Natural resolution of symptoms is more common in CYP than adults.

Clinical decision → SUSPECTED ASTHMA

The benefits of a confirmed asthma diagnosis may outweigh the risks of uncertainty of suspected asthma for patients and their carers.

ASTHMA

Confirm asthma or suspected diagnosis with patient. Ensure understanding. Code diagnosis using Ardens template. Record basis on which diagnosis has been made.
Agree on a management/asthma action plan with patient and review date.

SUSPECTED ASTHMA

Offer the same level of care for suspected asthma confirmed asthma, with appropriate treatment and at least annual review. Consider objective tests again or when available, especially if symptomatic.

POOR RESPONSE TO TREATMENT OR ATYPICAL FEATURES?

Check adherence and inhaler technique, review diagnosis, and consider referral

Shamina

- CXR normal
- PEFR diary shows 20% variability
- Spirometry shows reversibility
- Raised blood eos and FeNO

- What next?

Shamina

- Code as suspected asthma
- Code as asthma

Asthma diagnosis[9,10]

There is not a single, definitive test for asthma. Asthma diagnosis should be made based on history and ideally supported by objective tests. There is variable availability of objective tests across SEL, See here for local referral pathways.

6/6 features = high probability of asthma

1-5/6 features = intermediate probability of asthma

Features to support asthma diagnosis

1	2	3	4	5	6
Recurrent episodes of cough, wheeze, chest tightness and shortness of breath.	Symptom variation e.g. throughout the day and between seasons.	Absence of symptoms suggestive of an alternative diagnosis (exclude red flags).	Recorded clinical observation of wheeze. Opportunistically check and record this whenever possible.	Personal/family history of atopy +/- raised eosinophils as indicator of atopy	Positive peak expiratory flow rate (PEFR) monitoring or FEV1 variance. See here

Features may occur over time, and so recording each one when they occur in patient notes is important.

Presence of ≥ 1 feature to support asthma diagnosis?

NO → Consider alternative diagnosis

YES

Objective tests available and patient suitable?

NO → **PEFR monitoring and trial with ICS**

Undertake PEFR monitoring and if positive a trial with ICS over 6-8 weeks assessed using the Asthma Control Test™ and ideally FEV1 and/or serial PEFR

DO NOT DELAY TREATMENT IF YOU HAVE A HIGH CLINICAL SUSPICION OF ASTHMA AND OBJECTIVE TESTS ARE NOT AVAILABLE OR THERE IS A DELAY IN ACCESS.

YES

Asthma diagnosis supported by objective tests

Quality Assured Spirometry
Fractional exhaled nitric oxide (FeNO)
Bronchodilator reversibility
Peak Expiratory Flow Rate (PEFR) monitoring
Direct Bronchial Challenge Test

Objective tests indicate a positive diagnosis → ASTHMA

Objective tests indicate an uncertain diagnosis → SUSPECTED ASTHMA

Positive result → **Asthma diagnosis in the absence of objective tests**

Asthma diagnosis is a clinical decision based on high asthma probability and positive outcome of trial with ICS.

Clinical decision → ASTHMA

Negative or uncertain result → **Uncertain?**

Only a few features to support diagnosis of asthma?
Negative or uncertain response to ICS trial?
Undertake an ICS trial and then withdrawal of treatment.
If symptoms resolve with treatment and then return when treatment is withdrawn asthma is more likely. Natural resolution of symptoms is more common in CYP than adults.

The benefits of a confirmed asthma diagnosis may outweigh the risks of uncertainty of suspected asthma for patients and their carers.

Clinical decision → SUSPECTED ASTHMA

ASTHMA

Confirm asthma or suspected diagnosis with patient. Ensure understanding. Code diagnosis using Ardens template. Record basis on which diagnosis has been made.
Agree on a management/asthma action plan with patient and review date.

SUSPECTED ASTHMA

Offer the same level of care for suspected asthma confirmed asthma, with appropriate treatment and at least annual review. Consider objective tests again or when available, especially if symptomatic.

POOR RESPONSE TO TREATMENT OR ATYPICAL FEATURES?

Check adherence and inhaler technique, review diagnosis, and consider referral

Shamina

- You have diagnosed and coded as asthma
- What next?
  - Start a SABA on its own?
  - Start AIR?
  - Start MART?
  - Wait and see?

Managing asthma in adults [16,17], local practice

For abbreviations see here

18 years +

1 Choose between propellant and non-propellant inhalers

Non-propellant inhaler DPI/SMI
Dry Powder inhaler (DPI) and Soft Mist inhaler (SMI)
OR

DPI/SMI have a lower carbon footprint than propellant based, pressured metered dose inhalers (pMDI),
If using DPI prescribe pMDI SABA + spacer device for emergency use.

Propellant inhalers pMDI
Pressurised metered – dose inhaler

pMDI –must be used with a spacer device.
Use the inhaler links on this page to find the right spacer for each device.

2 Choose between SABA-Free (and SABA Pathways

SABA-Free Pathway For Step 1 and 2
NEW
PREFERRED

Using a combination ICS + rapid-release LABA (formoterol) inhaler instead of separate ICS and SABA inhalers reduces the risk of exacerbations and SABA overuse[6].
Step 1: start with AIR (As Needed **A**nti-**I**nflammatory **R**eliver therapy) and progress to MART (**M**aintenance and **R**eliever **T**herapy) – with rescue ICS/rapid action LABA (formoterol) inhaler as required.
SABA-Free can only be for step 1 and 2, if moving to Step 3, consider specialist input and move to SABA pathway as rescue/as required ICS/LABA use exceeds recommended ICS dose at Step 3 and 4.

OR

SABA Pathway
Traditional

Separate ICS and SABA inhalers. Risks SABA overuse.
There is a wider choice of ICS/LABA inhalers in this pathway as it is not restricted to rapid acting LABA – (formoterol) inhalers.

3 Choose step: starting at Step 1

Step up if symptoms are not controlled despite good adherence and technique.

Step down if symptoms well controlled and not at risk of exacerbations.

Review 6-8 weeks after a change.

4 Choose inhaler

Some steps offer a range of inhalers. Support patient choice using the table on P. 11

improving symptoms

Review and correct inhaler technique and confirm adherence to treatment before considering a step up in treatment. Consider step down once good asthma control has been maintained for 3 months

Worsening symptoms

Continue specialist-initiated management plans which may differ from this guide

New joint guidance from NICE/BTS/SIGN is due in 2024. Watch this space

Support for prescribing off license

Medium or high dose steroid? Issue steroid card SEL Guidance PIL

SABA-FREE PATHWAY: PREFERRED

Step 1: Low dose ICS + bronchodilator

AIR	DPI	Symbicort Turbohaler 200/6 1 puff as needed No regular inhaler
	pMDI	Fostair pMDI 100/6 1 puffs as needed No regular inhaler (off license indication)
MART	DPI	Symbicort Turbohaler 100/6 1-2 puffs BD **and** as needed
		Symbicort Turbohaler 200/6 1 puff BD **and** as needed
		Fostair Nexthaler 100/6 1 puffs BD **and** as needed
	pMDI	Fostair pMDI 100/6 1 puffs BD **and** as needed (off license indication)

Step 2: Moderate dose ICS/LABA

DPI	pMDI
Fostair Nexthaler 100/6 2 puffs BD **and** 1 as needed	Fostair pMDI 100/6 2 puffs BD **and** 1 as needed (off license indication)
Symbicort Turbohaler 200/6 2 puffs BD **and** 1 as needed	

Rescue/as needed low dose ICS/LABA in addition to regular preventer treatment as stepping up and down:
Maximum doses : **Symbicort Turbohaler** (200/6) 6 puffs on a single occasion, 12 puffs daily for short periods only, **Fostair pMDI** and **Nexthaler** max 8 puffs/day

Before stepping up to Step 3 and 4: Seek advice from asthma specialist GP, pharmacist or nurse, or referral to integrated/community or secondary care team .
Up to date eosinophil count and FeNO, if available, will help specialist management decisions

Step 3: High dose ICS/LABA or Moderate dose ICS/LABA/LAMA

SEEK ADVICE before stepping up to Step 3&4

DPI/SMI	pMDI
High dose ICS/LABA	
Fostair Nexthaler 200/6 2 puffs BD	Fostair pMDI 200/6 2 puffs BD
Relvar Ellipta 184/22 1 puff OD	
Atectura Breezhaler 125/260 1 capsule OD	
Moderate dose ICS/LABA/LAMA	
Trimbow Nexthaler 88/5/9 2 puffs BD (off license indication)	Trimbow pMDI 87/5/9 2 puffs BD
Symbicort Turbohaler 200/6 2 puffs BD **PLUS** Spiriva Respimat SMI 2 puffs OD	

Step 4: High dose ICS/LAMA/LABA

SEEK ADVICE before stepping up to Step 3 &4

DPI/SMI	pMDI
Fostair Nexthaler 200/6 2 puffs BD **PLUS** Spiriva Respimat 2 puffs OD	Trimbow pMDI 172/5/9 2 puffs BD (link to electronic medicines compendium)
Enerzair Breezhaler 114/46/136 1 capsule OD	
Relvar Ellipta 184/22 1 puff OD **PLUS** Spiriva Respimat SMI 2 puffs OD	

SABA PATHWAY

Regular ICS	DPI	Easyhaler Beclometasone 200 1 puffs BD	
		Pulmicort 200 turbohaler 1 puff BD	
	pMDI	QVAR 100 1 puff BD	
		Clenil 100 2 puffs BD	
As needed SABA	DPI	Ventolin 200 Accuhaler as needed	
		Bricanyl 500 Turbohaler as needed	
		Salbutamol Easyhaler as needed	
	pMDI	Salamol pMDI 100 as needed	
		Airomir pMDI 100 as needed	

DPI	pMDI
SABA-free choices above or	Fostair pMDI 100/6 2 puffs BD
Atectura Breezhaler 125/127.5 1 capsule OD	
Relvar Ellipta 92/22 1 puff OD	

Rescue/as needed SABA in addition to regular preventer treatment as stepping up and down:, Ventolin Accuhaler,, Bricanyl Turbohaler, Salamol pMDI, Airomir pMDI, Salbutamol Easyhaler ,

Adam

- 30 years
- Using SABA alone
- 8 prescription requests for SABA inhaler in last 12 months
- Invited for an asthma review
  - Poor inhaler technique
  - Little understanding of how inhalers work
  - Has heard that inhalers impact on the environment and feels he should be using less

Adam

What next?

- Demonstrate inhaler technique?
- Education and support with resources?
- ACT ™?
- Switch to AIR - DPI Symbicort turbohaler 200/6?

Self-care

Education
Understanding asthma and how the treatment works is an important aspect of care (see here for patient resources).

Personalised asthma action plans (PAAP)
PAAPs should be collaboratively agreed, regularly updated and include daily management and when and where to seek advice.
PAAP can be uploaded into Digital Health Passport – Digital Health Passport.

Smoking, passive smoking and e-cigarettes/vaping
Offer tobacco dependence advice and treatment for those with asthma, including asking about vaping.

Adherence and technique
Nonadherence plays a large role in poorly controlled asthma and exacerbations. Review adherence by asking and checking inhaler prescriptions ordered and support good technique with education and resources.

Exercise
Exercise is good for asthma. Ensure good asthma control to benefit from regular exercise.

Comorbidities

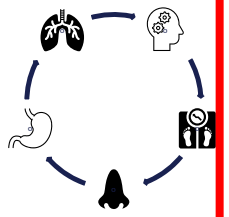
Obesity
Weight management support for overweight patients can contribute to good asthma control.

Atopic conditions
Hay fever and rhinitis: Use low steroid nasal spray and ensure correct technique. Optimise eczema care.

Disordered breathing and sleep apnoea

Acid reflux and heartburn

Managing co-morbidities is an important aspect of asthma care.



Depression and anxiety
Adverse asthma outcomes are associated with depression and panic disorder. Always ask, consider treatment and signpost to support.

COPD
COPD may overlap with asthma and is best managed with specialist input.

'Asthma is not just an acute condition that only needs treating when it's bad. It's a long-term chronic condition that need to be treated even when it's ok and patients feel good.'
Nurse specialist, south London

Access to healthcare

General Practice regular review
Patients who are reviewed regularly have a lower risk of asthma attack. Patients should be reviewed in general practice at least annually, after dose changes and exacerbations.

Continuity
Continuity within a practice team helps build relationships and trust and improve asthma care.

Vaccination
Offer flu vaccination annually, pneumococcal + other vaccinations as required e.g. COVID.

Emergency care
Asthma plans should include details of when and where to access urgent care.
Review in general practice or with community asthma team within 48 hours an A&E visit or hospital discharge.

Specialist care
Specialist referral is indicated when
- > 2 attacks/year
- asthma is not controlled despite treatment
- asthma is worse at work
- asthma **and** COPD overlap

Environment

Asthma control
Well controlled asthma has the lowest carbon imprint.

Outdoor Pollution
People with asthma should try to avoid busy roads and vigorous outdoor exercise on high pollutions days..

Indoor pollution
Electricity is the cleanest home energy source.
Damp and mould issues, burning wood, candles and incense adversely affect asthma.
'Chemical free' or 'allergy friendly' household and personal products limit asthma triggers.

Triggers
Triggers include pollen, cigarettes, emotion, weather changes and pets. Recognising and mitigating triggers will reduce risk of attacks and improve control.

Inhalers
Using inhalers as prescribed and with the correct technique reduces waste, improves control and reduces need for unplanned medical care.
Non-propellant (NP) inhalers such as DPIs, have a lower carbon footprint and can be used effectively by most people. They require a greater respiratory effort than pMDIs so may not be suitable for all patient groups, e.g. neurodiverse patients. Aim for an inhaler the patient can and will use.
Used inhalers should be returned to the pharmacy to be recycled or environmentally friendly disposal.
SEL support for prescribing sustainably

Occupational asthma
If symptoms are worse at work involve specialist review

Managing asthma in adults [16,17], local practice

For abbreviations see here

18 years +

1 Choose between propellant and non-propellant inhalers

Non-propellant inhaler DPI/SMI
Dry Powder inhaler (DPI) and Soft Mist inhaler (SMI)
OR
DPI/SMI have a lower carbon footprint than propellant based, pressured metered dose inhalers (pMDI),
If using DPI prescribe pMDI SABA + spacer device for emergency use.

Propellant inhalers pMDI
Pressurised metered – dose inhaler
pMDI –must be used with a spacer device.
Use the inhaler links on this page to find the right spacer for each device.

2 Choose between SABA-Free (and SABA Pathways

SABA-Free Pathway For Step 1 and 2
NEW
PREFERRED
Using a combination ICS + rapid-release LABA (formoterol) inhaler instead of separate ICS and SABA inhalers reduces the risk of exacerbations and SABA overuse[6].
Step 1: start with AIR (As Needed **A**nti-**I**nflammatory **R**eliver therapy) and progress to MART (**M**aintenance and **R**eliever **T**herapy) – with rescue ICS/rapid action LABA (formoterol) inhaler as required.
SABA-Free can only be for step 1 and 2, if moving to Step 3, consider specialist input and move to SABA pathway as rescue/as required ICS/LABA use exceeds recommended ICS dose at Step 3 and 4.

OR

SABA Pathway
Traditional
Separate ICS and SABA inhalers. Risks SABA overuse.
There is a wider choice of ICS/LABA inhalers in this pathway as it is not restricted to rapid acting LABA – (formoterol) inhalers.

3 Choose step: starting at Step 1

Step up if symptoms are not controlled despite good adherence and technique.

Step down if symptoms well controlled and not at risk of exacerbations.

Review 6-8 weeks after a change.

4 Choose inhaler

Some steps offer a range of inhalers. Support patient choice using the table on P. 11

Improving symptoms ← Review and correct inhaler technique and confirm adherence to treatment before considering a step up in treatment. Consider step down once good asthma control has been maintained for 3 months → Worsening symptoms

Continue specialist-initiated management plans which may differ from this guide

New joint guidance from NICE/BTS/SIGN is due in 2024. Watch this space

Support for prescribing off license

Medium or high dose steroid? Issue steroid card SEL Guidance PIL

SABA-FREE PATHWAY: PREFERRED

Step 1: Low dose ICS + bronchodilator

AIR	DPI	Symbicort Turbohaler 200/6 1 puff as needed No regular inhaler	MART	DPI	Symbicort Turbohaler 100/6 1-2 puffs BD **and** as needed
					Symbicort Turbohaler 200/6 1 puff BD **and** as needed
					Fostair Nexthaler 100/6 1 puffs BD **and** as needed
	pMDI	Fostair pMDI 100/6 1 puffs as needed No regular inhaler (off license indication)		pMDI	Fostair pMDI 100/6 1 puffs BD **and** as needed (off license indication)

Step 2: Moderate dose ICS/LABA

DPI	pMDI
Fostair Nexthaler 100/6 2 puffs BD **and** 1 as needed	Fostair pMDI 100/6 2 puffs BD **and** 1 as needed (off license indication)
Symbicort Turbohaler 200/6 2 puffs BD **and** 1 as needed	

Rescue/as needed low dose ICS/LABA in addition to regular preventer treatment as stepping up and down:
Maximum doses : **Symbicort Turbohaler** (200/6) 6 puffs on a single occasion, 12 puffs daily for short periods only, **Fostair pMDI** and **Nexthaler** max 8 puffs/day

Step 3: High dose ICS/LABA or Moderate dose ICS/LABA/LAMA

SEEK ADVICE before stepping up to Step 3&4

DPI/SMI	pMDI
High dose ICS/LABA	
Fostair Nexthaler 200/6 2 puffs BD	Fostair pMDI 200/6 2 puffs BD
Relvar Ellipta 184/22 1 puff OD	
Atectura Breezhaler 125/260 1 capsule OD	
Moderate dose ICS/LABA/LAMA	
Trimbow Nexthaler 88/5/9 2 puffs BD (off license indication)	Trimbow pMDI 87/5/9 2 puffs BD
Symbicort Turbohaler 200/6 2 puffs BD **PLUS** Spiriva Respimat SMI 2 puffs OD	

Step 4: High dose ICS/LAMA/LABA

SEEK ADVICE before stepping up to Step 3 &4

DPI/SMI	pMDI
Fostair Nexthaler 200/6 2 puffs BD **PLUS** Spiriva Respimat 2 puffs OD	Trimbow pMDI 172/5/9 2 puffs BD (link to electronic medicines compendium)
Enerzair Breezhaler 114/46/136 1 capsule OD	
Relvar Ellipta 184/22 1 puff OD **PLUS** Spiriva Respimat SMI 2 puffs OD	

Before stepping up to Step 3 and 4: Seek advice from asthma specialist GP, pharmacist or nurse, or referral to integrated/community or secondary care team .
Up to date eosinophil count and FeNO, if available, will help specialist management decisions

SABA PATHWAY

Regular ICS	DPI	Easyhaler Beclometasone 200 1 puffs BD	As needed SABA	DPI	Ventolin 200 Accuhaler as needed
		Pulmicort 200 turbohaler 1 puff BD			Bricanyl 500 Turbohaler as needed
					Salbutamol Easyhaler as needed
	pMDI	QVAR 100 1 puff BD		pMDI	Salamol pMDI 100 as needed
		Clenil 100 2 puffs BD			Airomir pMDI 100 as needed

DPI	pMDI
SABA-free choices above or	Fostair pMDI 100/6 2 puffs BD
Atectura Breezhaler 125/127.5 1 capsule OD	
Relvar Ellipta 92/22 1 puff OD	

Rescue/as needed SABA in addition to regular preventer treatment as stepping up and down:, Ventolin Accuhaler,, Bricanyl Turbohaler, Salamol pMDI, Airomir pMDI, Salbutamol Easyhaler ,

Alison

- 47 years
- Complaining of breathlessness
- History of childhood asthma, which then settled in early 20s
- Recent ex smoker
- BMI 37
- Recent chest infection treated in community
- Blood eosinophils not raised

Alison

What next?

- Investigate for breathlessness including CXR and referral for diagnostic tests
- Trial of ICS with serial PEFR readings
- Community spirometry with FeNO, CXR
- Seek specialist advice

Asthma diagnosis[9,10]

There is not a single, definitive test for asthma. Asthma diagnosis should be made based on history and ideally supported by objective tests. There is variable availability of objective tests across SEL, See here for local referral pathways.

6/6 features = high probability of asthma

1-5/6 features = intermediate probability of asthma

Features to support asthma diagnosis

1	2	3	4	5	6
Recurrent episodes of cough, wheeze, chest tightness and shortness of breath.	Symptom variation e.g. throughout the day and between seasons.	Absence of symptoms suggestive of an alternative diagnosis (exclude red flags).	Recorded clinical observation of wheeze. Opportunistically check and record this whenever possible.	Personal/family history of atopy +/- raised eosinophils as indicator of atopy.	Positive peak expiratory flow rate (PEFR) monitoring or FEV1 variance. See here

Features may occur over time, and so recording each one when they occur in patient notes is important.

Presence of ≥ 1 feature to support asthma diagnosis?

NO → Consider alternative diagnosis

YES

Objective tests available and patient suitable?

NO → DO NOT DELAY TREATMENT IF YOU HAVE A HIGH CLINICAL SUSPICION OF ASTHMA AND OBJECTIVE TESTS ARE NOT AVAILABLE OR THERE IS A DELAY IN ACCESS.

PEFR monitoring and trial with ICS

Undertake PEFR monitoring and if positive a trial with ICS over 6-8 weeks assessed using the Asthma Control Test™ and ideally FEV1 and/or serial PEFR

Positive result

Asthma diagnosis in the absence of objective tests

Asthma diagnosis is a clinical decision based on high asthma probability and positive outcome of trial with ICS.

Clinical decision

ASTHMA

Negative or uncertain result

Uncertain?

Only a few features to support diagnosis of asthma?
Negative or uncertain response to ICS trial?
Undertake an ICS trial and then withdrawal of treatment.
If symptoms resolve with treatment and then return when treatment is withdrawn asthma is more likely. Natural resolution of symptoms is more common in CYP than adults.

The benefits of a confirmed asthma diagnosis may outweigh the risks of uncertainty of suspected asthma for patients and their carers.

Clinical decision

SUSPECTED ASTHMA

YES

Objective tests available and patient suitable?

Asthma diagnosis supported by objective tests

Quality Assured Spirometry
Fractional exhaled nitric oxide (FeNO)
Bronchodilator reversibility
Peak Expiratory Flow Rate (PEFR) monitoring
Direct Bronchial Challenge Test

Objective tests indicate a positive diagnosis → **ASTHMA**

Objective tests indicate an uncertain diagnosis → **SUSPECTED ASTHMA**

ASTHMA

Confirm asthma or suspected diagnosis with patient. Ensure understanding. Code diagnosis using Ardens template. Record basis on which diagnosis has been made.
Agree on a management/asthma action plan with patient and review date.

SUSPECTED ASTHMA

Offer the same level of care for suspected asthma confirmed asthma, with appropriate treatment and at least annual review. Consider objective tests again or when available, especially if symptomatic.

POOR RESPONSE TO TREATMENT OR ATYPICAL FEATURES?

Check adherence and inhaler technique, review diagnosis, and consider referral

When to seek advice and/or refer?[21, 22]

In an emergency

Asthma action plans should include details of when to seek urgent help. See here for emergency management of asthma and when to call 999/refer to A&E

Worrying Symptoms/'Red Flags'[9]

Prominent systemic features
Unexpected clinical finding e.g. cardiac disease, clubbing
Persistent, non-variable breathlessness
Chronic sputum production
Unexplained restrictive spirometry
CXR changes
Marked eosinophilia

Patient under specialist care

Patients with asthma under specialist care including those receiving biologics, should receive the same level and access to general practice care as all patients with asthma or suspected asthma – this includes an annual review. Do not reduce or stop ICS without consulting specialist.

Patients on biologics are not immunocompromised and do not have additional monitoring requirements.. Inhaled medication dose change should only be made in consultation with specialist. More information

Communication between primary, secondary and community services is key to ensure patients receive consistent advice and support and have clear oversite of their care.

Complexity

Asthma and COPD overlap
Occupational asthma
Complex co-morbidity

Diagnostic uncertainty

Poor response to treatment or diagnostic uncertainty.

Uncontrolled asthma

It is important to distinguish between poorly controlled asthma and severe asthma.
Refer patient with asthma symptoms despite optimal treatment. Before referring check the following:

On high intensity treatment?
Are they at the high–end of treatment escalation according treatment algorithm?

Adherence?
Have you explored if taking meds as prescribed?
If fewer than 4 ICS or ICS./LABA inhalers, or more than 3- 6 SABA in a 12-month period – this suggests poor adherence or control.

Severe exacerbations?
Refer if ≥2 courses of PO steroids or admission in last year

Technique
Is their inhaler technique correct? Consider changing inhalers to best suit the patient.

Exclude other conditions
Are comorbidities being managed?

Psychosocial factors

Adverse asthma outcomes are associated with depression, anxiety, panic disorder and low socioeconomic status. Consider referring for support for patients or their primary carers to mental health workers, Talking therapy, Social Prescribing Link Worker, community support and to community asthma nurses.

For inhaler technique and medicines advice

Refer to community pharmacy team

If in doubt..

1. Discuss with a clinician with interest in respiratory within your primary care team or PCN, if there is one
2. Consider seeking specialist advice via Consultant Connect or Advice & Guidance
3. May need secondary care referral if the first 2 steps do not answer the clinical questions.

Simon

- 32 years old
- Non-smoker
- No comorbidities
- On MART (maintenance and reliever therapy)
  Low dose ICS + LABA
- Using ‘as needed' 4-5 times a week
- Good technique and adherence
- ACT ™ score 18

Simon

What next?

- Wait and see?
- Step down to AIR?
- Seek specialist advice or refer?
- Step up to higher dose ICS?

Managing asthma in adults [16,17], local practice

For abbreviations see here

18 years +

1 Choose between propellant and non-propellant inhalers

Non-propellant inhaler DPI/SMI
Dry Powder inhaler (DPI) and Soft Mist inhaler (SMI)
OR

DPI/SMI have a lower carbon footprint than propellant based, pressured metered dose inhalers (pMDI),
If using DPI prescribe pMDI SABA + spacer device for emergency use.

Propellant inhalers pMDI
Pressurised metered – dose inhaler

pMDI –must be used with a spacer device.
Use the inhaler links on this page to find the right spacer for each device.

2 Choose between SABA-Free (and SABA Pathways

SABA-Free Pathway For Step 1 and 2
NEW
PREFERRED

Using a combination ICS + rapid-release LABA (formoterol) inhaler instead of separate ICS and SABA inhalers reduces the risk of exacerbations and SABA overuse[6].
Step 1: start with AIR (As Needed **A**nti-**I**nflammatory **R**eliver therapy) and progress to MART (**M**aintenance and **R**eliever **T**herapy) – with rescue ICS/rapid action LABA (formoterol) inhaler as required.
SABA-Free can only be for step 1 and 2, if moving to Step 3, consider specialist input and move to SABA pathway as rescue/as required ICS/LABA use exceeds recommended ICS dose at Step 3 and 4.

OR

SABA Pathway
Traditional

Separate ICS and SABA inhalers. Risks SABA overuse.
There is a wider choice of ICS/LABA inhalers in this pathway as it is not restricted to rapid acting LABA – (formoterol) inhalers.

3 Choose step: starting at Step 1

Step up if symptoms are not controlled despite good adherence and technique.

Step down if symptoms well controlled and not at risk of exacerbations.

Review 6-8 weeks after a change.

4 Choose inhaler

Some steps offer a range of inhalers. Support patient choice using the table on P. 11

Improving symptoms

Review and correct inhaler technique and confirm adherence to treatment before considering a step up in treatment. Consider step down once good asthma control has been maintained for 3 months

Worsening symptoms

Continue specialist-initiated management plans which may differ from this guide

New joint guidance from NICE/BTS/SIGN is due in 2024. Watch this space

Support for prescribing off license

Medium or high dose steroid? Issue steroid card SFL Guidance PIL

SABA-FREE PATHWAY: PREFERRED

Step 1: Low dose ICS + bronchodilator

AIR	DPI	Symbicort Turbohaler 200/6	1 puff as needed No regular inhaler
	pMDI	Fostair pMDI 100/6	1 puffs as needed No regular inhaler (off license indication)
MART	DPI	Symbicort Turbohaler 100/6	1-2 puffs BD **and** as needed
		Symbicort Turbohaler 200/6	1 puff BD **and** as needed
		Fostair Nexthaler 100/6	1 puffs BD **and** as needed
	pMDI	Fostair pMDI 100/6	1 puffs BD **and** as needed (off license indication)

Step 2: Moderate dose ICS/LABA

DPI	pMDI
Fostair Nexthaler 100/6 2 puffs BD **and** 1 as needed	Fostair pMDI 100/6 2 puffs BD **and** 1 as needed (off license indication)
Symbicort Turbohaler 200/6 2 puffs BD **and** 1 as needed	

Before stepping up to Step 3 and 4: Seek advice from asthma specialist GP, pharmacist or nurse, or referral to integrated/community or secondary care team.
Up to date eosinophil count and FeNO, if available, will help specialist management decisions

Step 3: High dose ICS/LABA or Moderate dose ICS/LABA/LAMA

SEEK ADVICE before stepping up to Step 3&4

DPI/SMI	pMDI
High dose ICS/LABA	
Fostair Nexthaler 200/6 2 puffs BD	Fostair pMDI 200/6 2 puffs BD
Relvar Ellipta 184/22 1 puff OD	
Atectura Breezhaler 125/260 1 capsule OD	
Moderate dose ICS/LABA/LAMA	
Trimbow Nexthaler 88/5/9 2 puffs BD (off license indication)	Trimbow pMDI 87/5/9 2 puffs BD
Symbicort Turbohaler 200/6 2 puffs BD **PLUS** Spiriva Respimat SMI 2 puffs OD	

Step 4: High dose ICS/LAMA/LABA

SEEK ADVICE before stepping up to Step 3 &4

DPI/SMI	pMDI
Fostair Nexthaler 200/6 2 puffs BD **PLUS** Spiriva Respimat 2 puffs OD	Trimbow pMDI 172/5/9 2 puffs BD (link to electronic medicines compendium)
Enerzair Breezhaler 114/46/136 1 capsule OD	
Relvar Ellipta 184/22 1 puff OD **PLUS** Spiriva Respimat SMI 2 puffs OD	

Rescue/as needed low dose ICS/LABA in addition to regular preventer treatment as stepping up and down:
Maximum doses : **Symbicort Turbohaler** (200/6) 6 puffs on a single occasion, 12 puffs daily for short periods only, **Fostair pMDI** and **Nexthaler** max 8 puffs/day

SABA PATHWAY

Regular ICS	DPI	Easyhaler Beclometasone 200	1 puffs BD
		Pulmicort 200 turbohaler	1 puff BD
	pMDI	QVAR 100 1 puff BD	
		Clenil 100 2 puffs BD	
As needed SABA	DPI	Ventolin 200 Accuhaler	as needed
		Bricanyl 500 Turbohaler	as needed
		Salbutamol Easyhaler	as needed
	pMDI	Salamol pMDI 100	as needed
		Airomir pMDI 100	as needed

DPI	pMDI
SABA-free choices above or	Fostair pMDI 100/6 2 puffs BD
Atectura Breezhaler 125/127.5 1 capsule OD	
Relvar Ellipta 92/22 1 puff OD	

Rescue/as needed SABA in addition to regular preventer treatment as stepping up and down:, Ventolin Accuhaler,, Bricanyl Turbohaler, Salamol pMDI, Airomir pMDI, Salbutamol Easyhaler ,

What hope that we have helped

- To understand the importance of **not** prescribing SABA alone
- To introduce the **new** SABA-Free pathway that reduces exacerbation risk
- Suggestions for **sustainable** asthma care

With thanks to: Sian Howell, Cheryl Leung, Irem Patel, Maeve Savage, LJ Smith and the whole of the CESEL and SEL RRP teams

South East London Integrated Care System

NHS South East London

Q & A

South East London Integrated Care System

NHS South East London

Thank you