NHS England

NHS West Yorkshire Integrated Care Board

Diagnostic Spirometry in Primary Care SOP – Revised August 2022

Introduction

The aim of this document is to provide a practical support and guidance for the restart of Diagnostic Spirometry within Primary Care following a pause during 2020 – 2022 due to Covid-19 restrictions.

This guide is a pragmatic approach and will be reviewed regularly and amended once the impact of the pandemic on Spirometry testing has reduced. Whilst the pandemic is not over, spirometry, a simple and crucial diagnostic test in diagnosing respiratory disease is one of the key activities that needs to be restarted.

Without diagnostic spirometry, patients may receive provisional diagnoses with potential consequences including unnecessary or inappropriate treatment or lack of treatment to improve for their condition. It's also an important factor in addressing health inequalities given we know incidence for those with respiratory disease are higher in disadvantaged and protected groups and areas of social deprivation

For these same reasons the quality of the test also matters. This is defined as quality assured spirometry and it forms the basis of an early and accurate diagnosis, one of the national respiratory priorities in the NHS Long Term Plan along with being included in the Quality and Outcomes Framework.

Feedback from systems and practices suggests many are now moving towards the restoration of spirometry and the following points will be useful as part of these considerations:

1. **Spirometry can be performed safely for patients and staff**

Recently published evidence confirms that spirometry is not aerosol generating, any risk is with an associated cough and simple mitigating strategies are effective in reducing risk.

Spirometry is not on the UK Aerosol Generating Procedures (list and the most recent rapid review of aerosol generating procedures in June 2022 concluded that it should it remain excluded from the list). This means general IPC guidance should apply and this has been recently updated by UKHSA, marking a step in the transition back to pre-pandemic IPC measures.

Infection Prevention and Control Teams have been consulted in the development of this document.

2. Support is available to deliver high quality spirometry

The test, whilst basic, does require a clear understanding of the process and patient compliance to deliver the correct results and so it is important staff receive the appropriate support and training to deliver this with the necessary confidence and competence. The Association of Respiratory Technology and Physiology sets and assesses competence against the standards for quality assured spirometry. All diagnostic spirometry should meet these essential quality standards.

Training is provided by a range of providers and a number of options are available, including e learning. It is also possible to split the certification between those performing and those interpreting and reporting spirometry, allowing some staff, such as healthcare assistants, to focus on undertaking of the measurement.

An update of the document 'A Guide to Performing Quality Assured Spirometry' will also be released shortly from the UK Chief Scientific Officers on how to perform quality assured spirometry in primary care and the community.

It is important to acknowledge that while SARS-CoV-2 infection presents a new challenge with respect to Infection Prevention and Control (IPC), other airborne or contact transmitted pathogens considerations (e.g. influenza, tuberculosis, HIV) have long presented a similar challenge, both in hospital and community settings. Settings will already have in place IPC procedures to minimize and 'manage overall risk'.

An update of the document 'A Guide to Performing Quality Assured Spirometry' will also be released shortly from the UK Chief Scientific Officers on how to perform quality assured spirometry in primary care and the community. This guide will be added once available.

Preparation for restart / diagnostic hub

- Equipment should have an annual service and calibration performed as per manufacturers guidance, where appliable
- Manufacturer information regarding cleaning should be obtained and reviewed
- Spirometry should be performed with a single use bacterial/viral filter in the circuit that meets ATS/ERS standards
- Bacterial Filters may impact readings: Check with spirometer manufacturers whether the machine should be verified with or without a bacterial filter in place– some machines have corrections built-in so should be verified without a filter, even if testing with one.
- Patient literature should be reviewed to include additional steps to mitigate against SARS-CoV-2 infection
- It is nationally "recommended" that all staff performing, and interpreting spirometry should be certificated and registered on the ARTP Spirometry Register
- **We suggest that ALL staff undertaking spirometry performance/interpretation watch the refresher course on** https://wyh.icst.org.uk/log-in

Workforce considerations

- Spirometry staff should attend training updates
- Staff undertaking spirometry should have received additional IPC training as part of their update
- Staff should have competence for performance and interpretation reviewed

My Patient requires Post Bronchodilator spirometry OR My Patient requires Spirometry with Reversibility

Booking rules (responsibility of referring GP Practice)

- GP Clinical decision to refer a patient for Spirometry as per guidance set out in the **Prioritisation of Patients- Does my patient need Pathway** (Appendix 1)
- GP completes Diagnostic Spirometry checklist (Appendix 2) and saves it to the patient record
- GP informs the patient they have been added to the waiting list, GP informs patient the booking team will contact them to complete a Pre attendance questionnaire and confirm a suitable date and time for the appointment
- GP discusses the potential risks and benefits with patients to ensure informed decision-making (see Appendix 1 and 3 for supporting guidance)

Booking the appointment

- Trained persons within the booking Team oversee the waiting list and book patients into pre-planned clinics or ad-hoc appointments.
- Booking team contacts patient from the waiting list in date order to offer an appointment for Spirometry, patient will be left on the waiting list until attends and completes the appointment
- Booking team will complete the Pre attendance questionnaire on booking the appointment using preferred communication method i.e. Telephone (see Appendix 4)
- Patients should be prioritised for spirometry based on the risk to the patient of ongoing versus not undergoing the procedure – see Appendix 1, 2 & 3
- Appointment booked and confirmed
- Patient Attends Appointment

<u>Performing Diagnostic Spirometry</u>

Step 1. Room preparation

- If available, use a room with ventilation, either an extractor fan or an open window.
- The room used should contain no superfluous items and should be kept clear of all unnecessary equipment,
- The verification syringe will need to be pumped through to ensure environmental conditions are equilibrated before verification.
- There needs to be an orange bin and access to or cleaning facilities, i.e. sink

Step 2. Staff PPE/Preparation

- Staff should follow Practice PPE/Hand Washing procedures

Step 3. Performing Spirometry

- Call patient into the room for testing.
- Check patient identity, name, date of birth and the first line of address

- Measure patient's height and weight and input this into the software.
- Ensure the door is closed.
- If no contraindications:
    - Perform spirometry as per standard approach. **ALL tests require a single use antibacterial and antiviral filter <u>NOT</u> a one-way valved mouthpiece.**
    - Explain the test to the patient with the extractor fan turned on if there is one available.
    - Step back and be behind the patient whilst they perform the test.
    - Complete three acceptable tests. PATIENT PUTS ON THEIR SURGICAL MASK IN BETWEEN EACH TEST so that if they cough, they are coughing into a mask. Dispose of the filter into the orange clinical waste bin.
    - Encourage patient to perform hand hygiene using alcohol based hand rub, unless contra-indicated
    - Patient leaves the room. Open the window and if applicable extractor fan is turned on.
    - Wipe down the hard surfaces and clean spirometer using detergent wipes: "EN14476 standard" i.e. Clinell wipes
    - Perform hand hygiene

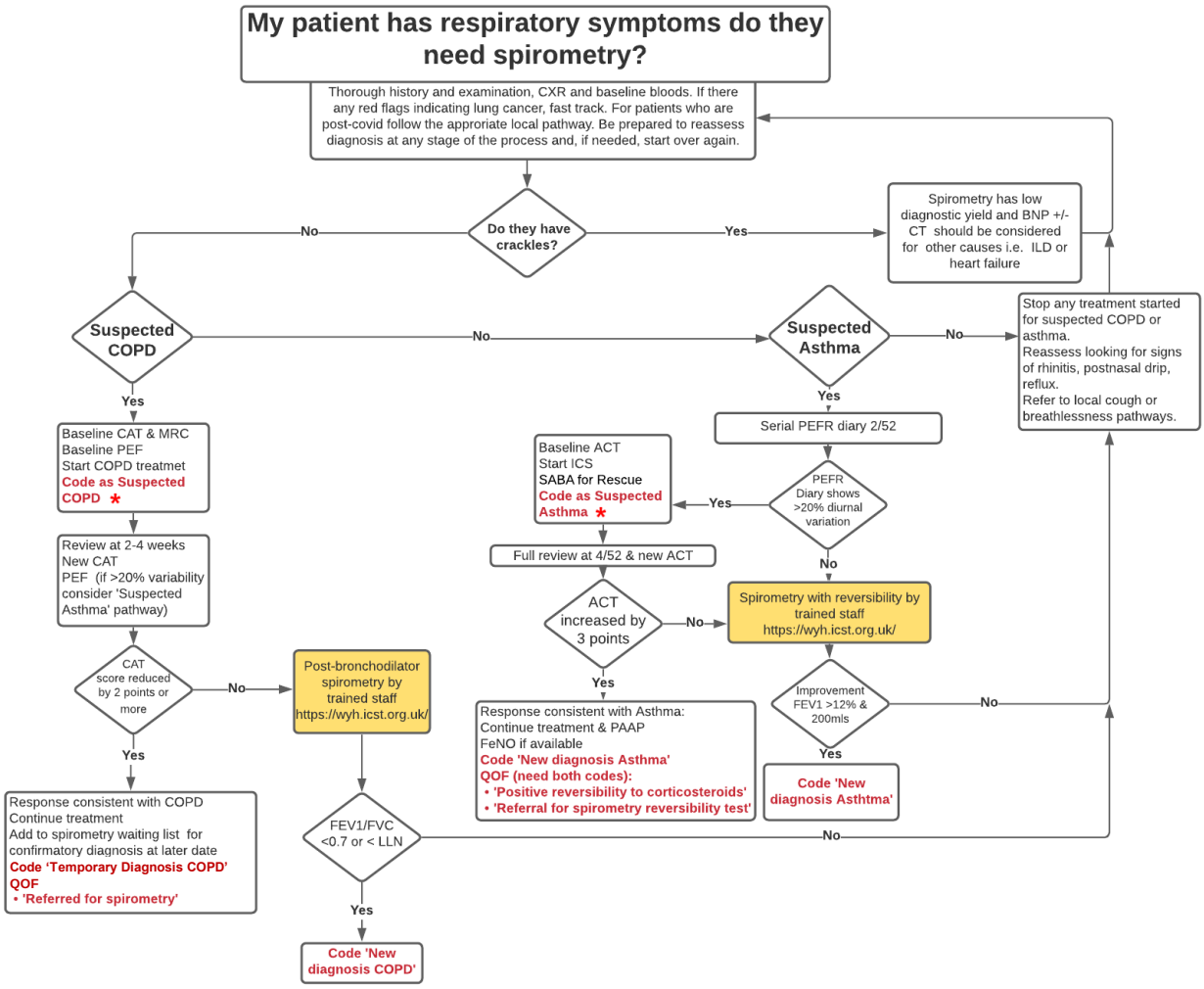
The Result

- Spirometry Complete - Advise the patient the practice will contact the patient to arrange follow-up . Patient removed from waiting list
- Spirometry unsuccessful - Leave patient on the waiting list to be rebooked at a later date.
- Interpretation made and results added to patient record
- Requesting GP/Practice Nurse to take action with the patient according to results from interpretation

Appendix 1 - Prioritisation of Patients- Does my patient need spirometry

During the pandemic access to Spirometry and Reversibility testing has been severely restricted and resulted in a large number of patients receiving a temporary diagnosis and awaiting diagnostic spirometry.

The flow chart below is intended to be used to prioritise those patients who require access to treatment but in whom there may be a significant wait for spirometry testing.
Once access to spirometry has been re established and impact of the pandemic reduced, please follow BTS/SIGN for Asthma and NICE for COPD.



* Please follow national guidance whenever possible.

Appendix 2 - Diagnostic Spirometry Checklist

IMPORTANT NOTE

Due to patient effort needed to obtain reliable spirometry this test needs to be done during periods of clinical stability

It is therefore imperative that at the point of referral the patient is clinically fit to undertake a spirometry test within 3 months

PATIENT DETAILS				
Patient name				
Date of Birth				
NHS Number				
Address				
Telephone no(s)				
Any special requirements				
REFERRER DETAILS				
Name				
Designation				
GP Practice				
Telephone no(s)				
Email address				
Date of referral				
CLINICAL HISTORY				
Past medical history				
Clinical history including duration of symptoms				
Current medication				
Allergies				
Smoking history	Current	Ex	Never	Pack Years
Inhaled Therapy	Yes	No	Type:	
Antibiotics in last ?? days	Yes	No	Type:	

PRIOR TO REFERRAL	
Spirometry is a test which will help confirm clinically suspected asthma or COPD. Therefore, please ensure differential diagnosis is considered, before making this referral, ie cough; post nasal drip; reflux disease; Ca; Dyspnoea; cardiac disease; obesity; PE or other acute respiratory condition	
Please check that the following contraindications have been excluded [plus use clinical judgement]:	**Please tick ☑**
Haemoptysis of unknown origin (forced expiratory manoeuvre may aggravate the underlying condition);	
Pneumothorax [in the last 12 months]	
Unstable cardiovascular status (forced expiratory manoeuvre may worsen angina or cause changes in blood pressure) or 'recent' myocardial infarction or pulmonary embolus;	
Thoracic, abdominal or cerebral aneurysms (danger of rupture due to increased thoracic pressure);	
Recent eye/ear/thoracic or abdominal surgery [in last 3 months]	
Presence of an acute illness or symptom that might interfere with test performance (e.g. nausea, vomiting)	
Recent thoracic or abdominal surgery	
Chest infection or pneumonia [in the past six weeks]	
Pregnancy [third trimester]	
Uncontrolled hypertension	

REASON FOR REFERRAL			
Condition Clinically suspected	COPD	Asthma	Other [please advise]
Is this referral to review an existing diagnosis?	Yes / No		
Is this referral to confirm a new diagnosis?	Yes / No		

Appendix 3 - Contraindications for Spirometry

Absolute Contraindications

- Active Lung infection e.g. AFB positive TB until treated for 2 weeks
- Active or suspected SARS-CoV-2 infection identified through PCR or LFD swab in the last 30 days, pre attendance questionnaire, increased temperature or presenting symptoms
- Asked to isolate by NHS app, a Public Health or NHS professional in the previous 10 days
- Conditions that may be cause serious consequences if aggravated by forced expiration e.g. dissecting / unstable aortic aneurysm, current pneumothorax, recent surgery including ophthalmic, thoracic abdominal or neurosurgery

Relative Contraindications

- Suspected respiratory infection in the last 4-6 weeks
- Undiagnosed chest symptoms e.g. hemoptysis
- Any condition which may be aggravated by forced expiration e.g. history of prior pneumothorax; unstable vascular status such as recent (within 1 month) myocardial infarction, uncontrolled hypertension or pulmonary embolism or history of hemorrhagic event (stroke); previous thoracic, abdominal or eye surgery
- If the patient is too unwell to perform forced expiration
- Communication problems such as learning disability or confusion

Appendix 4 - Pre-Attendance Questionnaire

- Discuss the potential risks and benefits virtually with patients to ensure informed decision making
- Ensure patients are informed not to attend the surgery if they have COVID-19 symptoms
- Screen for symptoms (extended symptom list):
    - Cough
    - Temperature ≥ 37.8
    - Loss of smell or taste
    - Flu-like symptoms
    - Any similar symptoms in household members or regular contacts

Group Responsible- West Yorkshire ICB Respiratory Network

Early and Accurate Diagnosis Subgroup of the West Yorkshire Respiratory Clinical Network:

Name	**Role**	**Organisation**
Lisa Chandler	Public Health Principal	West Yorkshire ICB Wakefield (HCP) Wakefield Council
Samantha Pepper	Physiologist	Mid Yorkshire NHS Hospitals Trust
Helen Wright	ANP and Partner	West Yorkshire ICB Wakefield (HCP)
Anjali Gondker	Respiratory Consultant	Mid Yorkshire NHS Hospitals Trust
Rob Daw	Respiratory ANP	West Yorkshire ICB Bradford (HCP)
Amanjot Aujla	Transformation Project Manager	West Yorkshire ICB Kirklees (HCP)
Sarah Cowdell	Respiratory Nurse Specialist	Locala Community Partnership CIC
Harriet Smith	Programme Manager	YHAHSN
Laura Williams	Programme Lead Personalised Care	West Yorkshire ICB
Charlotte Coles	Senior Pathway Integration Manager – Home Oxygen/Long Term Conditions	West Yorkshire ICB Leeds (HCP)
Lauren Lear	Clinical Scientist Service Manager- Non Invasive Physiology	Leeds Teaching Hospitals Trust
Anne Wilkinson	Clinical Lead - Community Respiratory Service	Leeds Community Healthcare Trust
Gareth McMahon		Calderdale and Huddersfield NHS Foundation Trust

Additional Consultation

Name	**Role**	**Organisation**
Katherine Hickman	GP and Respiratory Clinical Lead	West Yorkshire ICB – Bradford HCP- West Yorkshire Respiratory Clinical Network
Ian Clifton	Respiratory Consultant	Leeds Teaching Hospitals Trust
Joy Allen	Senior Infection Control Nurse	Kirklees and Wakefield Infection Prevention Team, Kirklees Council

Place Based Consultation (To be added at Place)

Name	Role	Organisation

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